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GILBERT WHITE'S
SELBORNE

VOL. I

THE NATURAL HISTORY & ANTIQUITIES OF SELBORNE & A GARDEN KALENDAR BY THE REVEREND GILBERT WHITE M.A

EDITED BY R. BOWDLER SHARPE, LL.D., WITH AN INTRODUCTION TO THE GARDEN KALENDAR BY THE VERY REVEREND S. REYNOLDS HOLE, DEAN OF ROCHESTER, & NUMEROUS ILLUSTRATIONS BY J. G. KEULEMANS, HERBERT RAILTON, & EDMUND J. SULLIVAN. IN TWO VOLUMES. VOLUME ONE

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INTRODUCTION

THE editing of Gilbert White's "Selborne" has been one of the most interesting tasks which has ever fallen to my lot. Notwithstanding the many excellent editions of the work, I have been able to add a good deal of matter which will be read with interest by lovers of Gilbert White. I have carefully collated the text of the original edition with that ordinarily published, and I have found several variations in the renderings, which I have restored to their original form, as issued by the author.

The "Pennant" Letters now in the British Museum contain many passages which have been deemed worthy of restoration in the present edition. So little is known of Gilbert White's personal history, that every additional fact seems to me to be of interest, and the letters contain many notes not previously published. This is especially the case with respect to the letters about John White's Gibraltar collections, and in a further memoir I shall endeavour to trace out more completely the details of Gilbert White's life; for, although the materials for such a biography are difficult to get together after a lapse of more than a century, I am sure that a great many more facts can be collected.

Apart from Westminster Abbey, Windsor Castle, and other places of historical interest in the British Islands, there is probably no place, save Stratford-on-Avon, to which the pilgrims of the Anglo-Saxon race render more respectful tribute than to the lowly head-stone which marks the grave of Gilbert White of Selborne. The occupant of that

simple grass-grown grave[1] would probably have been the most astonished of all people in the world could he have realised that his celebrity as an Englishman would have come near to equalling that of Shakspere; and yet there exists at the present date as much affection, among naturalists at least, for the sayings and doings of Gilbert White as is felt for the records of Shakspere and his time.

That Gilbert White still lives with us through his book, and speaks to us as if he were alive, can be realised by any naturalist who visits Selborne. The "Natural History of Selborne" has been given to most of us as a prize at school —it is included amongst the "hundred best books" which every one is expected to read in these days, or to gather into a standard library;—and yet if one asks any schoolboy or school-girl whether they have read their prize-book through, they will mostly answer in the negative. Gilbert White is as far over the heads of the majority of the present generation of children as he was over the heads of the generation in which he lived. It is only as one advances in years that the peace and restfulness of this most delightful of books impresses the mind.

Gilbert White lived in a different age, and although he tells us sometimes that he was much "hurry'd," there was none of that dreadful feverish haste which characterises our national life at the present day.

In the course of editing this volume I have pondered a hundred times on the wonderful fact that the world should take such a heartfelt interest in the work of a retiring and modest eighteenth-century clergyman! Selborne

[1] I am often reminded, when standing in Selborne churchyard by the headstone marked "G. W., June 20, 1793," of that other tomb which I visited in 1885 at Delhi, with its epitaph composed by the Princess Jahánárá herself three hundred years ago: "Let nothing but the green grass conceal my grave; for the grass is the best covering for the pure in spirit; the humble, the transitory Jahánárá, the disciple of the holy men of Chist; the daughter of the Emperor Sháh Jahán; may God illumine his intentions."

is even now somewhat out of the world. In Gilbert White's time it was a remote country village, off the high-road, and only approachable by "hollow lanes," in winter often choked by snow-drifts, or unapproachable through floods, and by no means an accessible place at any time. The present road through the village was then a "cart-way," with deep ruts. Mr. Henry Maxwell of Selborne, who has helped me so much in the elucidation of the development of the history of the village, though by no means yet a patriarch, can still remember when the "cart-way" ran through it from end to end, and the farmers' gigs and market-vehicles were built to a gauge, to accommodate them to the ruts which were such a feature of the Hampshire roads and lanes of fifty years ago. Selborne has changed with the times, almost as much as other parts of rural England have changed, and the Selborne of to-day is *not* the Selborne of Gilbert White. In the days when Blyth and Bennett and Jardine wrote, there was not much difference in the appearance of the village from the days of our author, but the last fifty years have wrought considerable changes, and it is by no means easy to reconstruct Selborne as it was in Gilbert's time. Many old houses still remain, the "Hanger" still dominates the village, and many of the general features are the same, but few people can recognise the places as Gilbert White wrote of them a hundred and fifty years ago.

"The Wakes," Gilbert White's old house, still stands in the village street. His brew-house is there—his stables—the study in which he wrote the "Letters" to Pennant and to the Hon. Daines Barrington—his bedroom—his kitchen (since Professor Bell's time utilised as a library)—and the room in which he breathed his last. His "great parlour" was turned by Professor Bell into a dining-room, and a portion of it cut off to form a passage to the new wing which the Professor built. The old house was unfitted for modern requirements, and successive owners have added to it.

Some recent authors have taken exception to the alterations which were made by Sir Edward Bradford and other owners of "The Wakes," and one would fancy that the whole character of the house had been changed. These criticisms appear to me to have been singularly unfair. Given an old house of the last century, and a need for restoration and enlargement by the owner of the property, who, after all, *is* the owner of his own house in this free land of ours, I cannot imagine any modifications of an original edifice carried out with more scrupulous affection for the original surroundings than has been shown by the successors of Gilbert White. Professor Bell was an absolute devotee to White's memory, and edited his works with a degree of care and affection unsurpassed in the annals of biography. He it was who cut a passage along the north end of Gilbert's "great parlour," to lead to the new wing which he built as a drawing-room, but the external features of the house were scarcely disturbed. When Sir Edward Bradford added a storey to the new part of the house, the roof and the chimneys were built in exact accordance with the old part of "The Wakes," and no one can really find anything to criticise in the additions which have been made to the house since Gilbert White's time. It would indeed be difficult to find any historical English building which has been treated with more reverential care by the owners of the property since Gilbert White's days. The memory of the present owner of "The Wakes," Mr. Paxton Parkin, will be inseparably connected with the history of Gilbert's old home, for the loving care with which the ancient features of the place have been preserved. Much of the old work was relaid and replaced by Professor Bell, but much more has been done by Mr. Parkin since his ownership, and there has probably never been a time in the history of "The Wakes" when the old house and the garden recalled so eloquently the past traditions of the place.

Surely no man, not seeking fame, has had a more endurable monument erected to him in the hearts of English-speaking people than Gilbert White. Many excellent editions of his work, the "Natural History of Selborne," have appeared—more than eighty in fact—since he was laid to rest in the churchyard a hundred and six years ago. Of these editions pre-eminent stand those of Bennett, Jardine, and Harting, written as if under the spell of old Gilbert himself. Mr. Grant Allen's recent edition is also remarkable for the profusion of illustrations. No edition, however, can ever equal that of the late Professor Bell, whose name, celebrated enough for his own achievements in zoological science, gains additional splendour from his connection with Gilbert White's old home, where he lived for so many years. Not only did Bell own "The Wakes" for nearly half a century, but he had access to private family documents belonging to Gilbert White's collateral descendants which will never again be gathered under one roof. If Bell had lived in these days of the "Selborne Society," many of the relics which were dispersed after his death might have become national property, and have been available for study by those who love Gilbert White and his memory. Even Bell's edition, though classical and immortal, leaves many blanks in the history of the family, and the inner story of Gilbert White's simple life yet remains to be fully written. As an edition of White's "Selborne" it can hardly be beaten, for Bell lived in White's old house, had the whole of his correspondence before him, was the accepted authority on "British Mammalia," and for ornithological matter received the co-operation of Professor Alfred Newton, who not only possesses a profound knowledge of British ornithology in all its aspects, but is himself one of the pioneers of the "Gilbertian" method of exact record, whence have flowed those practical works of field-observation by which British Naturalists of the present generation have been distinguished (*cf.* his "Ootheca

Wolleyana"). He is, moreover, the recognised historian of ornithology (*cf.* the "Encyclopædia Britannica").

I have so much to say regarding Gilbert White and his times, that I do not propose, on the present occasion, to go further into the subject, as much of the material of my memoir is still imperfect. A great deal that has been written about Gilbert White and Selborne appears to me to have been compiled without any trouble having been taken to "verify" the references. One editor is satisfied with having spent "two" days in Selborne, and seems to be quite content with his mastery of the subject. Another editor apparently spends weeks in the place, and has even then not mastered the Hampshire dialect!

I have myself spent some weeks in the village, and I now fully realise how difficult it is to identify the Selborne of 1899 with the Selborne of a hundred and fifty years back. Thus I content myself with these few preliminary remarks, since, thanks to researches on the spot, the help of various members of the family, and the knowledge gained from many old people in Selborne, I hope to present to my readers on a future occasion a much more complete record of Gilbert White and Selborne as it was in his time.

It only remains for me to return my sincere thanks to my colleagues in the MSS. Department of the British Museum for facilities granted in the examination of the Gilbert White Letters; and to my friends at Selborne, Mr. and Mrs. W. Paxton Parkin; the Rev. Arthur Kaye; the Rev. Edmund Field; Mr. William White, F.S.A., and other kind people, especially Mr. Henry Maxwell, whose assistance will be more fully acknowledged in the course of the more detailed work which I have in preparation.

I have also great pleasure in acknowledging the notes I have received from my colleagues in the Natural History Museum, Mr. C. W. Andrews, Mr. G. A. Boulenger, F.R.S., Mr. W. E. de Winton, Mr. Oldfield Thomas, Mr. R. I. Pocock, and others. In the course of editing the present

work I have quoted some of the excellent notes from the editions of Sir William Jardine, Professor Bell, Mr. J. Edmund Harting, Mr. Grant Allen, &c., all of which I have duly acknowledged.

R. BOWDLER SHARPE.

CHISWICK, *December* 5, 1899.

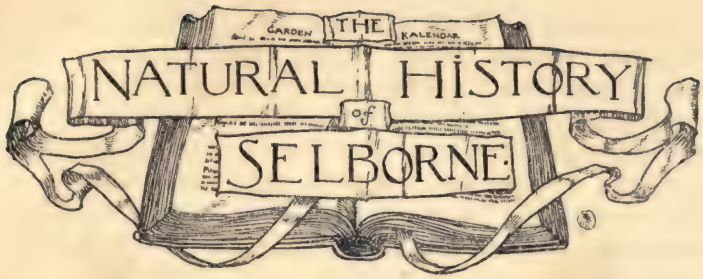
P.S.—Since the above was written Professor Newton's account of Gilbert White's life has appeared in the "Dictionary of National Biography." Knowing by personal experience the difficulty which surrounds any attempt at rendering an exact history of Gilbert White, I am more than delighted at the wonderful manner in which Professor Newton has performed his labour of love. In my opinion, this is one of the most wonderful histories of a naturalist ever compiled, and Gilbert White has indeed been fortunate in his Biographer.—R. B. S.

NOTE

The initials appended to the footnotes are to be read as follows :—

G. W.—Gilbert White's original notes.
R. B. S.—R. Bowdler Sharpe, Editor.
G. A. B.—G. A. Boulenger, F.R.S. *British Museum.*
W. J.—Sir William Jardine, Bart.
H. M.—Henry Maxwell, Esq.
R. I. P.—Reginald Innes Pocock, *British Museum.*
W. E. de W.—W. E. de Winton, F.Z.S. *British Museum.*

26 June
Gilbert White's Grove



LETTER I

[The "Letters to Pennant," with which Gilbert White commenced his volume on the "Natural History of Selborne," were never really addressed to that gentleman, but were evidently interpolated for the purpose of forming an introduction to the actual correspondence, so as to give some idea of the characteristics of Selborne and the surrounding country. The first letter absolutely sent to Pennant was 'Letter X' of the 'Natural History,' as we learn from the original MS. letters now preserved in the British Museum.—R. B. S.]

TO THOMAS PENNANT, ESQ.

THE parish of Selborne[1] lies in the extreme eastern corner of the county of *Hampshire*, bordering on the county of *Sussex*, and not far from the county of *Surrey;* is about fifty miles south-west of *London*, in latitude 51, and near midway between the towns of *Alton* and *Petersfield*. Being very large and extensive it abuts on twelve parishes, two of which are in *Sussex*, viz., *Trotton* and *Rogate*. If you begin from the south and proceed westward, the adjacent parishes are *Emshot*,[2] *Newton Valence*, *Faringdon*,

[1] For remarks on the etymology of Selborne see Letter II of the 'Antiquities.' —[R. B. S.]

[2] Professor Bell (pp. 1, 2) gives some interesting notes on the names of the parishes mentioned by Gilbert White. Of Empshott he pronounces the etymology to be very obscure; in Domesday Book it is spelt *Hibisete*. How it has come to be called *Emp*shott Bell was unable to discover, but *sete* has been changed to *shott* in many cases which he quotes, such as Campessete to Kempshott, &c. Newton Valence is written Newentone in Domesday Book, and 'took its name

Harteley Mauduit, Great Ward le ham, Kingsley, Hadleigh, Bramshot, Trotton, Rogate, Lysse, and *Greatham.* The soils of this district are almost as various and diversified as the views and aspects. The high part of the south-west consists of a vast hill of chalk, rising three hundred feet above the village, and is divided into a sheep-down, the high wood and a long hanging wood, called *The Hanger.* The covert of this eminence is altogether beech, the most lovely of all forest trees, whether we consider its smooth rind or bark, its glossy foliage, or graceful pendulous boughs. The down, or sheep-walk, is a pleasing park-like spot, of about one mile by half that space, jutting out on the verge of the hill-country, where it begins to break down into the plains, and commanding a very engaging view, being an assemblage of hill, dale, woodlands, heath, and water. The prospect is bounded to the south-east and east by the vast range of mountains called the *Sussex Downs,* by *Guild-down* near *Guildford,* and by the *Downs* round *Dorking,* and *Ryegate* in *Surrey,* to the north-east, which altogether, with the country beyond *Alton* and *Farnham,* form a noble and extensive outline.

At the foot of this hill, one stage or step from the uplands, lies the village, which consists of one single straggling street, three-quarters of a mile in length, in a sheltered vale, and running parallel with *The Hanger.* The houses are divided from the hill by a vein of stiff clay (good

from William de Valentin, half-brother to Henry III., who held the manor in 1273' (*Moody*). Hartley Mauditt or Maudytt is also, according to Bell, the 'ordinary orthography,' and in Domesday Book the name of the then lord of the manor is spelt *Maldoit* and *Malduith.* "The name Hartley or Harteley, which occurs in several other places to the north of Selborne, forms one of many indications of the extensive ancient forest of the district, extending eastward and including those of Alice Holt and Wolmer."—(Bell, ed. p. 2 *note.*)

Worldham was spelt Werildeham in Domesday Book, and Bell could not find any warranty for Gilbert White's rendering of the name. The etymology is, he says, very doubtful, but he hazards the suggestion that "the Saxon name Werildeham had reference to the longevity of the inhabitants, and that Wer-ylde ham may be literally translated 'The old men's village.' The common pronunciation amongst the peasantry of the district is 'Wordleham.'"—(Bell, *l.c.*)

Hedleigh is Headley, and Lysse the Liss of the present day.—[R. B. S.]

wheat-land), yet stand on a rock of white stone, little in appearance removed from chalk; but seems so far from being calcareous, that it endures extreme heat. Yet that the freestone still preserves somewhat that is analogous to chalk is plain from the beeches which descend as low as those rocks extend, and no farther, and thrive as well on them, where the ground is steep, as on the chalks.

The cart-way of the village divides, in a remarkable manner, two very incongruous soils. To the south-west is a rank clay, that requires the labour of years to render it mellow; while the gardens to the north-east, and small enclosures behind, consist of a warm, forward, crumbling mould, called *black malm*, which seems highly saturated with vegetable and animal manure; and these may perhaps have been the original site of the town; while the woods and coverts might extend down to the opposite bank.

At each end of the village, which runs from south-east to north-west, arises a small rivulet: that at the north-west end frequently fails; but the other is a fine perennial spring, little influenced by drought or wet seasons, called *Well-head*.[1] This breaks out of some high grounds joining to *Nore Hill*, a noble chalk promontory, remarkable for sending forth two streams into two different seas. The one to the south becomes a branch of the *Arun*, running to *Arundel*, and so sailing into the *British* Channel; the other to the north.[2] The *Selborne* stream makes one

[1] This spring produced, *September* 10, 1781, after a severe hot summer, and a preceding dry spring and winter, nine gallons of water in a minute, which is 540 in an hour, and 12,960, or 216 hogsheads, in twenty-four hours, or one natural day. At this time many of the wells failed, and all the ponds in the vale were dry.—[G. W.]

Mr. Henry Maxwell writes to me: "Well-head has never failed in my time (say, for fifty-five years). Gilbert White says that it is 'little influenced by the seasons,' but I should say that at the present time it is considerably affected by the seasons—a fact due, I presume, to the decrease in rainfall."—[R. B. S.]

[2] Mr. Grant Allen, in his edition, makes a very pertinent alteration to this paragraph, correcting what he takes to be 'evident printer's errors' in the first edition. Undoubtedly the meaning is clearer, when the sentence reads as Mr. Grant Allen proposes: "the other, to the north, the Selborne stream, makes one branch of the Wey," &c.—[R. B. S.]

branch of the *Wey;* and, meeting the *Black-down* stream at *Hedleigh*, and the *Alton* and *Farnham* stream at *Tilford-bridge*, swells into a considerable river, navigable at *Godalming;* from whence it passes to *Guildford*, and so into the *Thames* at *Weybridge;* and thus at the *Nore* into the *German* Ocean.

Our wells, at an average, run to about sixty-three feet, and when sunk to that depth seldom fail; but produce a fine limpid water, soft to the taste, and much commended by those who drink the pure element, but which does not lather well with soap.

To the north-west, north and east of the village, is a range of fair enclosures, consisting of what is called *white malm*, a sort of rotten or rubble stone, which, when turned up to the frost and rain, moulders to pieces, and becomes manure to itself.[1]

Still on to the north-east, and a step lower, is a kind of white land, neither chalk nor clay, neither fit for pasture nor for the plough, yet kindly for hops, which root deep in the freestone, and have their poles and wood for charcoal growing just at hand. The white soil produces the brightest hops.

As the parish still inclines down towards *Wolmer-forest*, at the juncture of the clays and sand the soil becomes a wet, sandy loam, remarkable for timber, and infamous for roads. The oaks of *Temple* and *Blackmoor* stand high in the estimation of purveyors, and have furnished much naval timber; while the trees on the freestone grow large, but are what workmen call *shakey*, and so brittle as often to fall to pieces in sawing. Beyond the sandy loam the soil becomes a hungry lean sand, till it mingles with the forest; and will produce little without the assistance of lime and turnips.[2]

[1] This soil produces good wheat and clover.—[G. W.]

[2] Mr. William Curtis of Alton supplied Professor Bell with a chapter on the geology of the district (see Bell's ed. ii., pp. 374–377). I am indebted to my friend and colleague Mr. C. W. Andrews, of the Geological Department of the British Museum, for some notes on the subject, which will be found in the 'Appendix' to the present work.—[R. B. S.]

LETTER II

TO THE SAME

IN the court of *Norton* farm-house, a manor farm to the north-west of the village, on the white malm, stood within these twenty years a *broad-leaved elm*, or *wych hazel*,[1] *ulmus folio latissimo scabro* of Ray, which, though it had lost a considerable leading bough in the great storm in the year 1703, equal to a moderate tree, yet, when felled, contained eight loads of timber ; and, being too bulky for a carriage, was sawn off at seven feet above the butt, where it measured near eight feet in the diameter. This elm I mention to show to what a bulk *planted elms* may attain ; as this tree must certainly have been such from its situation.[2]

[1] "An elm so named from its wood having been used to make the chests called by old writers *wyches*, *hucches*, or *whycches*."—Prior, "Popular Names of British Plants," 3rd ed., p. 259.—[R. B. S.]

[2] The following note on this passage is given by Sir William Jardine in his edition of the present work (p. 6) :—

"The wych elm, the first tree alluded to, has been a subject always annotated upon, this species being far less commonly grown in England than in Scotland. In the former country it is supplanted almost entirely by the small-leaved or English elm, as it is commonly named, a tree which reaches a large size, and of

In the centre of the village, and near the church, is a square piece of ground surrounded by houses, and vulgarly called *The Plestor*.[1] In the midst of this spot stood, in old times, a vast oak, with a short squat body, and huge horizontal arms extending almost to the extremity of the area. This venerable tree, surrounded with stone steps,

which there are magnificent specimens in our public parks or promenades; but it produces a wood of inferior quality, and as it is now planted in the hedgerows of the small enclosures of the south, it must very materially injure the crops by its spreading roots, which shoot up and would soon cover the ground. The tree mentioned in this letter is the *Ulmus campestris*, Linn.; it yields a timber valuable for various agricultural purposes, and is esteemed for making *naves* for cart-wheels; it is of a more spreading character than the others, and often attains to a large size. The Selborne elm, though of less size than some others the measurements of which have been recorded, must have been a large and very fine tree.

"The oak trees mentioned in the latter part of this letter gained their peculiar character by being very thickly planted, and as it might be called 'neglected.' According to our notion of timber management thinning is indispensable, but to obtain trees of the kind alluded to, the thicker they can be grown, the better. Beech trees with a clean stem of from fifty to seventy feet are very valuable for keel pieces, but the practice of growing wood of any kind in this way has scarcely been practised. Larch planted for hop-poles, or sweet chestnut grown for the same purpose, are treated in this manner; and what in commerce is called Norway poles, are I believe the first thinnings of the Baltic forests, which have been spindled up by the more vigorous trees to great length and uniformity of thickness, and which in all probability would have been ultimately killed."

Professor Bell (p. 5 *note*) makes the following interesting observation on this passage: "On the grounds now belonging to the place, and at about fifty yards from the house, stands a very remarkable example of rejuvenescence in a tree of this species, the *Ulnus montana* of Bauhin. From its great age it had become a mere shell, but still continued to flourish; and in the month of June 1857 it suddenly broke and fell, from the mere weight of its foliage; for there was no wind at the time. The remains consisted of the broken and hollow base only of the trunk, but had no appearance of vitality; but it soon threw out young wood, and now forms a large and luxuriant tree, which is yearly covered with profuse foliage, and its new branches extend to nearly sixty feet across. It must be very old, probably three or four centuries, as a single branch, when sawn through, showed at least a hundred annual rings. The mass of the hollow fallen trunk, nearly six feet in diameter, is still preserved." A photograph of the tree is given in Prof. Bell's edition (p. lix). It is now (1899) flourishing, and is of larger dimensions than in Bell's time. Mr. Paxton Parkin, the present owner of the 'Wakes,' tells me that the spread of the branches amounts to over eighty feet.—[R. B. S.]

[1] *Vide* the plate in the 'Antiquities.'—[G. W.]

For an account of the Plestor (*i.e.* Pleystow, or Playing Place) and its foundation, see the 'Antiquities of Selborne' in vol. ii.—[R. B. S.]

and seats above them, was the delight of old and young, and a place of much resort in summer evenings; where the former sat in grave debate, while the latter frolicked and danced before them. Long might it have stood, had not the amazing tempest in 1703 overturned it at once, to the infinite regret of the inhabitants and the vicar, who bestowed several pounds in setting it in its place again: but all his care could not avail; the tree sprouted for a time, then withered and died. This oak I mention to show to what a bulk *planted oaks* also may arrive; and planted this tree must certainly have been, as will appear from what will be said farther concerning this area, when we enter on the antiquities of *Selborne*.

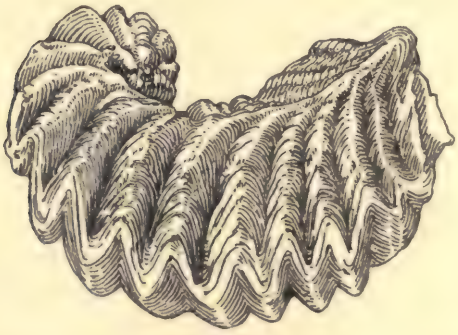
On the *Blackmoor* estate there is a small wood called *Losel's*, of a few acres, that was lately furnished with a set of oaks of a peculiar growth and great value; they were tall and taper like firs, but standing near together had very small heads, only a little brush without any large limbs. About twenty years ago the bridge at the *Toy*, near *Hampton Court*, being much decayed, some trees were wanted for the repairs that were fifty feet long without bough, and would measure twelve inches diameter at the little end. Twenty such trees did a purveyor find in this little wood, with this advantage, that many of them answered the description at sixty feet. These trees were sold for twenty pounds apiece.[1]

In the centre of this grove there stood an oak, which, though shapely and tall on the whole, bulged out into a large excrescence about the middle of the stem. On this a pair of ravens had fixed their residence for such a series of years, that the oak was distinguished by the title of *The Raven-tree*. Many were the attempts of the neighbouring youths to get at this *eyry:* the difficulty whetted their

[1] In Bell's edition (vol. ii. pp. 243–303) there is a considerable correspondence on trees and their culture between Gilbert White and Robert Marsham of Stratton-Strawless, in Norfolk. This correspondence was first printed in the *Transactions of the Norfolk and Norwich Naturalists' Society* for 1876 (vol. ii. pp. 133–198).—[R. B. S.]

inclinations, and each was ambitious of surmounting the arduous task. But when they arrived at the swelling, it jutted out so in their way, and was so far beyond their grasp, that the most daring lads were awed, and acknowledged the undertaking to be too hazardous: so the ravens built on, nest upon nest, in perfect security, till the fatal day arrived in which the wood was to be levelled. It was in the month of *February*, when these birds usually sit. The saw was applied to the butt,—the wedges were inserted into the opening,—the woods echoed to the heavy blow of the beetle or malle or mallet,—the tree nodded to its fall; but still the dam sat on. At last, when it give way, the bird was flung from her nest; and, though her parental affection deserved a better fate, was whipped down by the twigs, which brought her dead to the ground.[1]

[1] Sir William Jardine comments on this curious instance: "We have always found the Raven, whether nesting upon a rock or upon a tree, most unapproachable after she had been disturbed or alarmed." The pair of Ravens, which nested in Avington Park year after year, were also absolutely unapproachable during the breeding season.—[R. B. S.]



LETTER III

TO THE SAME

THE fossil-shells of this district, and sorts of stones, such as have fallen within my observation, must not be passed over in silence. And first I must mention, as a great curiosity, a specimen that was ploughed up in the chalky fields, near the side of the *Down*, and given to me for the singularity of its appearance, which to an incurious eye, seems like a petrified fish of about four inches long, the cardo passing for an head and mouth. It is in reality a *bivalve* of the *Linnæan Genus* of *Mytilus*, and the species of *Crista Galli;*[1] called by *Lister*, *Rastellum;* by *Rumphius*, *Ostreum plicatum minus;* by *D'Argenville*, *Auris Porci*, s. *Crista Galli;* and by those who make collections, *cock's comb*. Though I applied to several such in London, I never could meet with an entire specimen; nor could I ever find in books any engraving from a perfect one. In the superb *museum* at *Leicester House*[2]

[1] The species was identified in subsequent editions of "Selborne" as *Ostrea carinata* of Lamarck, but my colleague, Mr. R. Bullen Newton, of the Geological Department of the British Museum, has very kindly given me the following note:—"This is *Ostrea carinata*, Sowerby (*nec* Lamarck). It should properly be called *Ostrea ricordeana* d'Orbigny, to which species it has been referred by Coquand. White's specimen is noticed in Sowerby's "Mineral Conchology" (plate 365).—[R .B. S.]

[2] This was the celebrated collection of Mr. [afterwards Sir] Ashton Lever, and was known as the Leverian Museum. It contained many specimens described by Latham and the fathers of ornithology in England, and on the dispersal of the collection by auction in 1806—a sale which lasted sixty-five days and contained 7879 lots—many of the most interesting of its contents were purchased for foreign museums. An account of the Leverian birds still existing in the Imperial Museum at Vienna in 1873 was published by Von Pelzeln in the "Ibis" for that year (pp. 14–54, pl. I.). See also "Dict. National Biography," xxxiii. p. 137 (1893).—[R. B. S.]

permission was given to me to examine for this article ; and though I was disappointed as to the fossil, I was highly gratified with the sight of several of the shells themselves in high preservation. This bivalve is only known to inhabit the *Indian* Ocean, where it fixes itself to a zoophyte, known by the name *Gorgonia*. The curious foldings of the suture the one into the other, the alternate flutings or grooves, and the curved form of my specimen being much easier expressed by the pencil than by words, I have caused it to be drawn and engraved.

Cornua Ammonis are very common about this village. As we were cutting an inclining path up *The Hanger*, the labourer found them frequently on that steep, just under the soil, in the chalk, and of a considerable size. In the lane above *Well-head*, in the way to *Emshot*, they abound in the bank in a darkish sort of marl ; and are usually very small and soft : but in *Clay's Pond*, a little farther on, at the end of the pit, where the soil is dug out for manure, I have occasionally observed them of large dimensions, perhaps fourteen or sixteen inches in diameter. But as these did not consist of firm stone, but were formed of a kind of *terra lapidosa*, or hardened clay, as soon as they were exposed to the rains and frost they mouldered away. These seemed as if they were a very recent production. In the chalk-pit, at the north-west end of *The Hanger*, large *nautili* are sometimes observed.

In the very thickest strata of our freestone, and at considerable depths, well-diggers often find large *scallops* or *pectines*, having both shells deeply striated, and ridged and furrowed alternately. They are highly impregnated with, if not wholly composed of, the stone of the quarry.

LETTER IV

TO THE SAME

As in a former letter the *freestone* of this place has been only mentioned incidentally, I shall here become more particular.

This stone is in great request for hearth-stones, and the beds of ovens: and in lining of lime-kilns it turns to good account; for the workmen use sandy loam instead of mortar; the sand of which fluxes,[1] and runs by the intense heat, and so cases over the whole face of the kiln with a strong vitrified coat-like glass, that it is well preserved from iujuries of weather, and endures thirty or forty years. When chiselled smooth, it makes elegant fronts for houses, equal in colour and grain to the *Bath* stone; and superior in one respect, that, when seasoned, it does not scale. Decent chimney-pieces are worked from it of much closer and finer grain than *Portland;* and rooms are floored with it; but it proves rather too soft for this purpose. It is a freestone, cutting in all directions; yet has something of a grain parallel with the horizon, and therefore should not be *surbedded,* but laid in the same position that it grows

[1] There may probably be also in the chalk itself that is burnt for lime a proportion of sand, for few chalks are so pure as to have none.—[G. W.]

in the quarry.[1] On the ground abroad this freestone will not succeed for pavements, because, probably some degree of saltness prevailing within it, the rain tears the slabs to pieces.[2] Though the stone is too hard to be acted on by vinegar, yet both the white part, and even the *blue rag*, ferments strongly in mineral acids. Though the white stone will not bear wet, yet in every quarry at intervals there are thin strata of *blue rag*, which resist rain and frost; and are excellent for pitching of stables, paths and courts, and for building of dry walls against banks, a valuable species of fencing much in use in this village, and for mending of roads. This *rag* is rugged and stubborn, and will not hew to a smooth face, but is very durable: yet, as these strata are shallow and lie deep, large quantities cannot be procured but at considerable expense. Among the *blue rags* turn up some blocks tinged with a stain of *yellow* or *rust colour*, which seem to be nearly as lasting as the blue; and every now and then balls of a friable substance, like rust of iron, called *rust balls*.

In *Wolmer Forest* I see but one sort of stone, called by the workmen *sand*, or *forest-stone*. This is generally of the colour of rusty iron, and might probably be worked as iron ore; is very hard and heavy, and of a firm, compact texture, and composed of a small roundish crystalline grit, cemented together by a brown, terrene, ferruginous matter; will not cut without difficulty, nor easily strike fire with steel. Being often found in broad flat pieces, it makes good pavement for paths about houses, never becoming slippery in frost or rain; is excellent for dry walls, and is sometimes used in buildings. In many parts of that waste it lies scattered on the surface of the ground; but is dug on *Weaver's Down*, a vast hill on the eastern verge of that

[1] To *surbed* stone is to set it edgewise, contrary to the posture it had in the quarry, says Dr. *Plot*, "Oxfordshire," p. 77. But *surbedding* does not succeed in our dry walls; neither do we use it so in ovens, though he says it is best for *Teynton* stone.—[G. W.]

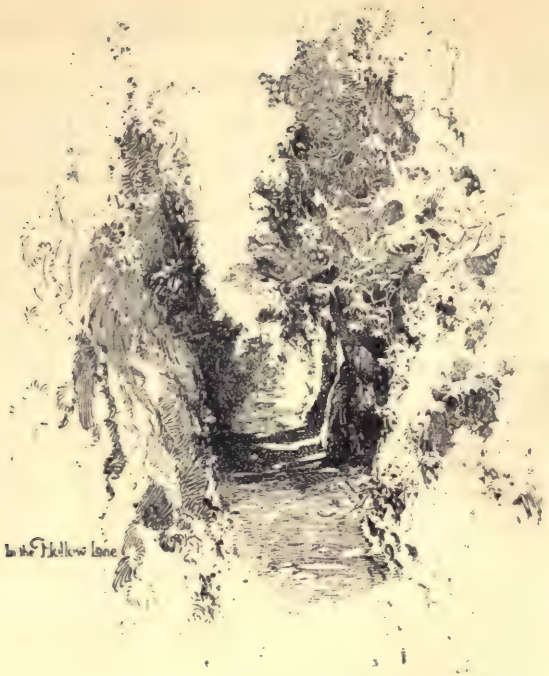
[2] "Firestone is full of salts, and has no sulphur: must be close-grained, and have no interstices. Nothing supports fire like salts; saltstone perishes exposed to wet and frost."—*Plot's* "Staff.," p. 152.—[G. W.]

forest, where the pits are shallow and the stratum thin. This stone is imperishable.

From a notion of rendering their work the more elegant, and giving it a finish, masons chip this stone into small fragments about the size of the head of a large nail; and then stick the pieces into the wet mortar along the joints of their freestone walls; this embellishment carries an odd appearance, and has occasioned strangers sometimes to ask us pleasantly, "whether we fastened our walls together with tenpenny nails."[1]

[1] The western wall of Selborne church is decorated in this manner. Mr. Grant Allen writes: "Walls of this sort still occur at Selborne: there are many close to the church. They are also common at Dorking and in other places on the greensand area."—(Ed. Selborne, p. 18 *note*.)—[R. B. S.]

Tablet Stone and Nail-headed Walling on Church.



LETTER V

TO THE SAME

AMONG the singularities of this place the two rocky hollow lanes, the one to *Alton*, and the other to the forest, deserve our attention. These roads, running through the malm lands, are, by the traffic of ages, and the fretting of water, worn down through the first stratum of our freestone, and partly through the second; so that they look more like water-courses than roads; and are bedded with naked *rag* for furlongs together. In many places they are reduced sixteen or eighteen feet beneath the level of the fields; and after floods, and in frosts, exhibit very grotesque and wild appearances, from the tangled roots that are twisted among the strata, and from the torrents rushing down their broken sides; and especially when those cascades are frozen into icicles, hanging in all the fanciful shapes of frost-work.

These rugged gloomy scenes[1] affright the ladies when they peep down into them from the paths above, and make timid horsemen shudder while they ride along them; but delight the naturalist with their various botany, and particularly with their curious *filices* with which they abound.

The manor of *Selborne*, was it strictly looked after, with all its kindly aspects, and all its sloping coverts, would swarm with game; even now hares, partridges, and pheasants abound; and in old days woodcocks were as plentiful. There are few quails, because they more affect open fields than enclosures; after harvest some few land-rails are seen.

The parish of *Selborne*, by taking in so much of the forest, is a vast district. Those who tread the bounds are employed part of three days in the business, and are of opinion that the outline, in all its curves and indentings, does not comprise less than thirty miles.

The village stands in a sheltered spot, secured by *The Hanger* from the strong westerly winds. The air is soft, but rather moist from the effluvia of so many trees;[2] yet perfectly healthy and free from agues.

The quantity of rain that falls on it is very considerable, as may be supposed in so woody and mountainous a district. As my experience in measuring the water is but of short date, I am not qualified to give the mean quantity.[3]

[1] "Scences," 1st ed., p. 11.—[R. B. S.]

[2] See Letter XXIX to Daines Barrington.—[R. B. S.]

[3] A very intelligent gentleman assures me (and he speaks from upwards of forty years experience), that the mean rain of any place cannot be ascertained till a person has measured it for a very long period. "If I had only measured the rain," says he, "for the four first years, from 1740 to 1743, I should have said the mean rain at *Lyndon* was 16½ inches for the year; if from 1740 to 1750, 18½ inches. The mean rain before 1763 was 20¼ inches, from 1763 and since 25½ inches, from 1770 to 1780, 26 inches. If only 1773, 1774, and 1775 had been measured, *Lyndon* mean rain would have been called 32 inches."—[G. W.]

Gilbert White's correspondent at Lyndon was Thomas Barker, "of an ancient and respectable family" in Rutlandshire, and was White's brother-in-law, having married his sister Anne. Both Thomas Barker and his son Samuel were much esteemed by our author, and many interesting letters from all the parties are to be found in the second volume of Professor Bell's edition.—[R. B. S.]

I only know that

		Inch.	Hund.
From May 1, 1779, to the end of the year there fell	.	28	37 !
Jan. 1, 1780, to Jan. 1, 1781	„ .	27	32
Jan. 1, 1781, to Jan. 1, 1782	„ .	30	71
Jan. 1, 1782, to Jan. 1, 1783	„ .	50	26 !
Jan. 1, 1783, to Jan. 1, 1784	„ .	33	71
Jan. 1, 1784, to Jan. 1, 1785	„ .	33	80
Jan. 1, 1785, to Jan. 1, 1786	„ .	31	55
Jan. 1, 1786, to Jan. 1, 1787	„ .	39	57 [1]

The village of *Selborne*, and large hamlet of *Oakhanger*, with the single farms, and many scattered houses along the verge of the forest, contain upwards of six hundred and seventy inhabitants.

A STATE *of the* PARISH *of* SELBORNE, *taken* OCTOBER 4, 1783.

The number of tenements or families, 136.
The number of inhabitants in the street is 313 } Total 676 ; near five inhabitants to each tene-
In the rest of the parish . . . 363 } ment.
In the time of the Rev. *Gilbert White*, Vicar, who died in 1727–8, the number of inhabitants was computed at 500.[2]

[1] In Bennett's edition the summary of the rainfall is continued up to the year 1793, from which it appears that in the last-mentioned year 48.56 was the measurement, and 40 inches is exceeded in three instances, though none equal Gilbert White's record for 1782. Professor Bell observes: "That the local circumstances of Selborne, surrounded by hills, and those hills more or less covered with trees, are the cause of the high rate of rainfall to which it is subject, cannot be doubted; and the results given in the text are fully borne out by a long succession of observations carefully made by myself. The annual average for 25 years, from 1850 to 1874 inclusive, amounts to 32.074 inches. In the year 1852 there fell 48.81 inches, and in 1873, 49.56, which is the largest amount I have recorded, slightly surpassed, however, by that mentioned in the text for 1782. On a comparison with a large number of other places in various parts of the Kingdom, the monthly reports in Mr. Symond's interesting *Meteorological Journal* show that, eliminating such exceptional localities as Seathwaite, &c., the fall of rain at Selborne is much above the average."—(Bell's edition, vol. i. p. 12 *note*.)—[R. B. S.]

Mr. Henry Maxwell writes: "Professor Bell makes the average rainfall 32.074. My record for fourteen years (1885–1898) is an average of 32.040."—[R. B. S.]

[2] Mr. Henry Maxwell informs me that the census of 1891 registered 613 as the population of Selborne itself, and 707 for the outlying districts. Total for the whole parish, 1320. In 1877 Bell speaks of the population as being 1100.

The Rev. Gilbert White was the grandfather and also the godfather of our author. He was the first of the family that had any direct connection with Selborne, of which parish he was vicar. He died in February 1727 (*cf.* Bell's ed., vol. i. Memoir, p. xxiii.).—[R. B. S.]

ROCKY HOLLOW LANE

AVERAGE OF BAPTISMS FOR SIXTY YEARS.

From 1720 to 1729, both years inclus.	Males 6, 9 / Fem. 6, 0	12, 9	From 1740 to 1749 incl.	Males 9, 2 / Fem. 6, 6	15, 8	From 1760 to 1769 incl.	Males 9, 1 / Fem. 8, 9	18, 0
From 1730 to 1739, both years inclus.	Males 8, 2 / Fem. 7, 1	15, 3	From 1750 to 1759 incl.	Males 7, 6 / Fem. 8, 1	15, 7	From 1770 to 1779 incl.	Males 10, 5 / Fem. 9, 8	20, 3

Total of baptisms of Males 515
" " Females . . . 465 } 980
Total of baptisms from 1720 to 1779, both inclusive, ... 60 years 980

AVERAGE OF BURIALS FOR SIXTY YEARS.

From 1720 to 1729, both years inclus.	Males 4, 8 / Fem. 5, 1	9, 9	From 1740 to 1749 incl.	Males 4, 6 / Fem. 3, 8	8, 4	From 1760 to 1769 incl.	Males 6, 9 / Fem. 6, 5	13, 4
From 1730 to 1732, both years inclus.	Males 4, 8 / Fem. 5, 8	10, 6	From 1750 to 1759 incl.	Males 4, 9 / Fem. 5, 1	10, 0	From 1770 to 1779 incl.	Males 5, 5 / Fem. 6, 2	11, 7

Total of burials of Males 315
" " Females . . . 325 } 640
Total of burials from 1720 to 1779, both inclusive, ... 60 years 640

Baptisms exceed burials by more than one-third.
Baptisms of Males exceed Females by one-tenth, or one in ten.
Burials of Females exceed Males by one in thirty.
It appears that a child, born and bred in this parish, has an equal chance to live above forty years.
Twins thirteen times, many of whom dying young have lessened the chance for life.
Chances for life in men and women appear to be equal.

A TABLE *of the* BAPTISMS, BURIALS, *and* MARRIAGES, *from* JANUARY 2, 1761, *to* DECEMBER 25, 1780, *in the* PARISH *of* SELBORNE.

	BAPTISMS.			BURIALS.			MAR.
	Males.	Females.	Total.	Males.	Females.	Total.	
1761	8	10	18	2	4	6	3
1762	7	8	15	10	14	24	6
1763	8	10	18	3	4	7	5
1764	11	9	20	10	8	18	6
1765	12	6	18	9	7	16	6
1766	9	13	22	10	6	16	4
1767	14	5	19	6	5	11	2
1768	7	6	13	2	5	7	6
1769	9	14	23	6	5	11	2
1770	10	13	23	4	7	11	3
1771	10	6	16	3	4	7	4
1772	11	10	21	6	10	16	3
1773	8	5	13	7	5	12	3
1774	6	13	19	2	8	10	1
1775	20	7	27	13	8	21	6
1776	11	10	21	4	6	10	6
1777	8	13	21	7	3	10	4
1778	7	13	20	3	4	7	5
1779	14	8	22	5	6	11	5
1780	8	9	17	11	4	15	3
	198	188	386	123	123	246	83

During this period of twenty years the births of males exceeded those of females, 10.
The burials of each sex were equal.
And the births exceeded the deaths, 140.

We abound with poor; many of whom are sober and industrious, and live comfortably in good stone or brick cottages, which are glazed, and have chambers above

stairs: mud buildings we have none. Besides the employment from husbandry, the men work in hop gardens, of which we have many; and fell and bark timber. In the spring and summer the women weed the corn; and enjoy a second harvest in September by hop-picking. Formerly, in the dead months they availed themselves greatly by spinning wool, for making of *barragons*, a genteel corded stuff, much in vogue at that time for summer wear; and chiefly manufactured at *Alton*, a neighbouring town, by some of the people called Quakers: but from circumstances this trade is at end.[1] The inhabitants enjoy a good share of health and longevity; and the parish swarms with children.

[1] Since the passage above was written, I am happy in being able to say that the spinning employment is a little revived, to the no small comfort of the industrious housewife.—[G. W.]

EAST WORLDHAM
KINGSLEY
HARTLEY MAUDITT
FARING-
DON
Oakhanger
N
W
E
S
HEADLEY
The Warren
Priory
Oakhanger Ponds
SELBORNE
Hollow Lane
Selborne Hill
Temple Farm
Blackmoors House
Manor House
NEWTON
VALENCE
Wolmer Pond
Wolmer Forest
BRAMSHOT
EMPSHOTT
THE PARISH OF SELBORNE
MAP OF
Weaver's Down
GREATHAM
ROGATE
LYSSE
0
1
2 miles
K

LETTER VI

TO THE SAME

SHOULD I omit to describe with some exactness the *forest* of *Wolmer*, of which three-fifths perhaps lie in this parish, my account of *Selborne* would be very imperfect, as it is a district abounding with many curious productions, both animal and vegetable; and has often afforded me much entertainment both as a sportsman and as a naturalist.

The royal *forest* of *Wolmer* is a tract of land of about seven miles in length, by two and a half in breadth, running nearly from north to south, and is abutted on, to begin to the south, and so to proceed eastward, by the parishes of *Greatham*, *Lysse*,[1] *Rogate*, and *Trotton*, in the county of *Sussex;* by *Bramshot*, *Hedleigh*, and *Kingsley*. This royalty consists entirely of sand covered with heath and fern; but is somewhat diversified with hills and dales, without having one standing tree in the whole extent.[2]

[1] Liss.—[R. B. S.]

[2] Mr. J. E. Harting in the 'Preface' to his third edition of White's Selborne, writes in 1880: "Wolmer Forest, which eighty years ago was 'without one standing tree in the whole extent,' is now partly enclosed, and planted to the extent of several hundred acres with oak, larch, and Scotch fir. Bin's Pond, a 'considerable lake,' which at one time 'afforded a safe and pleasing shelter to wild Ducks, Teals, and Snipe,' has long since been drained, and cattle now graze on its bed. The covert, 'in which Foxes and Pheasants formerly abounded,' has almost entirely disappeared. At the present time (1880) nearly 1500 acres are enclosed and planted, chiefly in Oak, Larch, and Scotch Fir; and the large size to which many of the firs have attained, proves how well adapted the soil is for that kind of timber. Outside the enclosure seedling firs are springing up rapidly; and, year by year, as the wind scatters the seeds, the area of the woodland increases, so that in time, were the trees not felled or burned, they would extend over the whole of the district comprised by the 'forest.' During the hot summer of 1864 a terrible conflagration occurred, and was supposed to have been

In the bottom, where the waters stagnate, are many bogs, which formerly abounded with subterraneous trees; though Dr. *Plot* says positively,[1] that "there never were any fallen trees hidden in the mosses of the southern counties." But he was mistaken: for I myself have seen cottages on the verge of this wild district, whose timbers consisted of a black hard wood, looking like oak, which the owners assured me they procured from the bogs by probing the soil with spits, or some such instruments: but the peat is so much cut out, and the moors have been so well examined, that none has been found of late.[2] Besides the oak, I have also been shown pieces of fossil wood of a paler colour, and softer nature, which the inhabitants call fir: but, upon a nice examination, and trial by fire, I could discover nothing resinous in them; and therefore rather suppose that they were parts of a willow or alder, or some such aquatic tree.

This lonely domain is a very agreeable haunt for many

the work of incendiaries; 540 acres in Longmoor and 170 in Brimstone Wood were destroyed before the fire burnt itself out. The amount of game destroyed, as may be supposed, was commensurate with the destruction of its haunts."—(Harting's ed., p. 18, *note.*)—[R. B. S.]

[1] See his "History of *Staffordshire*."—[G. W.]

[2] Old people have assured me, that on a winter's morning they have discovered these trees, in the bogs, by the hoar frost, which lay longer over the space where they are concealed, than on the surrounding morass. Nor does this seem to be a fanciful notion, but consistent with true philosophy. Dr. *Hales* saith, "That the warmth of the earth, at some depths under ground, has an influence in promoting a thaw, as well as the change of the weather from a freezing to a thawing state, is manifest, from this observation, viz., Nov. 29, 1731, a little snow having fallen in the night, it was, by eleven the next morning, mostly melted away on the surface of the earth, except in several places in *Bushy-park*, where there were *drains* dug and covered with earth, on which the snow continued to lie, whether those drains were full of water or dry; as also where *elm-pipes* lay under ground: a plain proof this, that those drains intercepted the warmth of the earth from ascending from greater depths below them: for the snow lay where the drain had more than four feet depth of earth over it. It continued also to lie on thatch, tiles, and the tops of walls."—See *Hales's Hæmastatics*, p. 360. QUERE, Might not such observations be reduced to domestic use, by promoting the discovery of old obliterated drains and wells about houses; and in Roman stations and camps lead to the finding of pavements, baths, and graves, and other hidden relics of curious antiquity?—[G. W.] (See also Letter LXI to Daines Barrington.

sorts of wild fowls, which not only frequent it in the winter, but breed there in the summer; such as lapwings, snipes, wild-ducks, and, as I have discovered within these few years, teals. Partridges in vast plenty are bred in good seasons on the verge of this forest, into which they love to make excursions: and in particular, in the dry summer of 1740 and 1741, and some years after, they swarmed to such a degree that parties of unreasonable sportsmen killed twenty and sometimes thirty brace in a day.

But there was a nobler species of game in this forest, now extinct, which I have heard old people say abounded much before shooting flying became so common, and that was the *heath-cock*, *black-game*, or *grouse*. When I was a little boy I recollect one coming now and then to my father's table. The last pack remembered was killed about thirty-five years ago; and within these ten years one solitary *grey hen* was sprung by some beagles in beating for a hare. The sportsmen cried out, "A hen pheasant;" but a gentleman present, who had often seen grouse in the north of England, assured me that it was a greyhen.[1]

[1] With regard to the distribution of Black Game in the south of England, Mr. Howard Saunders in his latest 'Manual' writes as follows: "They are found, in small numbers and locally, in Cornwall and South Devon, and are tolerably plentiful on Exmoor, as well as on the Brendons and the Quantocks, in Somersetshire; while they still maintain themselves in Dorset, Wilts, and the New Forest district. In Sussex, Surrey, and Berkshire their presence is the result of reintroduction early in the present century, and none are now to be found in Kent, where, however, the species existed in the time of Henry VIII.; and it is in an ordinance for the regulation of the royal household dated from Eltham that the word 'Grouse' makes its first appearance in our language as 'Grows.'—("Man. Brit. B.," p. 493.)

"This fine game-bird," writes Mr. Harting, "although it became extinct in Gilbert White's day, was reintroduced after the planting of the wood by Sir Charles Taylor, then ranger of the forest, and for some time throve exceedingly well. The parent stock of the present race came from Cumberland, and in 1872 an old man who had brought the birds to Wolmer was still living in the neighbouring village of Liphook." (Ed. Selborne, p. 21, *note*.) Colonel Feilden, the naturalist on the *Alert* in our last Polar expedition, and one of the most careful of modern observers, contributed to the same edition an interesting experience of his visit to Wolmer Forest in 1872. He found there but few grey-hens, but estimated that there were from forty to fifty black-cocks on the ground. He says: "If this polygamous species is to be kept up, the proportion of sexes ought to be reversed; as it now

Black-cock.

1/6 Life size.

Nor does the loss of our black game prove the only gap in the *Fauna Selborniensis*; for another beautiful link in the chain of beings is wanting, I mean the *red deer*, which toward the beginning of this century amounted to about five hundred head, and made a stately appearance. There is an old keeper, now alive, named *Adams*, whose great-grandfather (mentioned in a perambulation taken in 1635), grandfather, father, and self, enjoyed the head keepership of *Wolmer forest* in succession for more than an hundred years. This person assures me, that his father has often told him, that Queen *Anne*, as she was journeying on the *Portsmouth* road, did not think the forest of *Wolmer* beneath her royal regard. For she came out of the great road at *Lippock*,[1] which is just by, and, reposing herself on a bank smoothed for that purpose, lying about half a mile to the east of *Wolmer-pond*, and still called *Queen's-bank*, saw with great complacency and satisfaction the whole herd of red deer brought by the keepers along the vale before her, consisting then of about five hundred head. A sight this, worthy the attention of the greatest sovereign! But he farther adds that, by means of the *Waltham blacks*, or, to use his own expression, as soon as they began *blacking*, they were reduced to about fifty head, and so continued decreasing till the time of the late Duke of *Cumberland*. It is now more than thirty years ago that his highness sent down an huntsman, and six yoeman-prickers, in scarlet jackets laced with gold, attended by the stag-hounds; ordering them to take every deer in this forest alive, and to convey them in carts to *Windsor*. In the course of the summer they caught every stag, some of which showed extraordinary diversion: but in the following winter, when the hinds were also carried

is, the hens are worried and driven off the ground by the importunities of a crowd of suitors, and the result is that for several years past the warders have not come across a nest or brood on the Government lands." Major A. H. Cowie, who recently had charge of the bird-preservation in Wolmer Forest, tells me that he believes that there are none now left in the district, he never saw one alive or dead.—[R. B. S.]

[1] Liphook.

off, such fine chases were exhibited as served the country people for matter of talk and wonder for years afterwards. I saw myself one of the yeoman-prickers single out a stag from the herd, and must confess that it was the most curious feat of activity I ever beheld, superior to anything in Mr. *Astley's* riding-school. The exertions made by the horse and deer much exceeded all my expectations ; though the former greatly excelled the latter in speed. When the devoted deer was separated from his companions, they gave him, by their watches, law, as they called it, for twenty minutes ; when, sounding their horns, the stop-dogs were permitted to pursue, and a most gallant scene ensued.

LETTER VII

TO THE SAME

THOUGH large herds of deer do much harm to the neighbourhood, yet the injury to the morals of the people is of more moment than the loss of their crops. The temptation is irresistible; for most men are sportsmen by constitution: and there is such an inherent spirit for hunting in human nature, as scarce any inhibitions can restrain. Hence, towards the beginning of this century all this country was wild about deer-stealing. Unless he was a *hunter*, as they affected to call themselves, no young person was allowed to be possessed of manhood or gallantry. The *Waltham blacks* at length committed such enormities, that government was forced to interfere with that severe and sanguinary act called the *black act*,[1] which now comprehends more felonies than any law that ever was framed before. And, therefore, a late Bishop of *Winchester*, when urged to restock *Waltham-chase*,[2] refused, from a motive worthy of a prelate, replying "that it had done mischief enough already."

Our old race of deer-stealers are hardly extinct yet: it was but a little while ago that, over their ale, they used to recount the exploits of their youth; such as watching the pregnant hind to her lair, and, when the calf was dropped, paring its feet with a penknife to the quick to prevent its escape, till it was large and fat enough to be killed; the

[1] Statute 9 *Geo.* 1 c. 22.—[G. W.]

[2] This chase remains unstocked to this day; the bishop was Dr. *Hoadly* —[G. W.]

shooting at one of their neighbours with a bullet in a turnip-field by moonshine, mistaking him for a deer ; and the losing a dog in the following extraordinary manner : —Some fellows, suspecting that a calf new-fallen was deposited in a certain spot of thick fern, went, with a lurcher, to surprise it ; when the parent hind rushed out of the brake, and, taking a vast spring with all her feet close together, pitched upon the neck of the dog, and broke it short in two.

Another temptation to idleness and sporting was a number of rabbits, which possessed all the hillocks and dry places : but these being inconvenient to the huntsmen, on account of their burrows, when they came to take away the deer, they permitted the country-people to destroy them all.

Such forests and wastes, when their allurements to irregularities are removed, are of considerable service to the neighbourhoods that verge upon them, by furnishing them with peat and turf for their firing ; with fuel for the burning their lime ; and with ashes for their grasses ; and by maintaining their geese and their stock of young cattle at little or no expense.

The manor-farm of the parish of *Greatham* has an admitted claim, I see, (by an old record taken from the *Tower of London*), of turning all live stock on the forest, at proper seasons, *bidentibus exceptis*.[1] The reason, I presume, why sheep[2] are excluded, is, because, being such close grazers, they would pick out all the finest grasses, and hinder the deer from thriving.

Though (by statute 4 and 5 *W.* and *Mary*, c. 23) "to burn on any waste, between *Candlemas* and *Midsummer*, any grig, ling, heath and furze, goss or fern, is punishable with whipping and confinement in the house of correction;" yet, in this forest, about *March* or *April*, according to the

[1] For this privilege the owners of that estate used to pay to the king annually seven bushels of oats.—[G. W.]

[2] In *The Holt*, where a full stock of fallow-deer has been kept up till lately, no sheep are admitted to this day.—[G. W.]

The Deerstealers

"over their ale, they used to recount the exploits of their youth"

dryness of the season, such vast heath-fires are lighted up, that they often get to a masterless head, and, catching the hedges, have sometimes been communicated to the underwoods, woods, and coppices, where great damage has ensued. The plea for these burnings is, that, when the old coat of heath, &c. is consumed, young will sprout up, and afford much tender brouze for cattle ; but, where there is large old furze, the fire, following the roots, consumes the very ground ; so that for hundreds of acres nothing is to be seen but smother and desolation, the whole circuit round looking like the cinders of a volcano ; and, the soil being quite exhausted, no traces of vegetation are to be found for years. These conflagrations, as they take place usually with a north-east or east wind, much annoy this village with their smoke, and often alarm the country ; and, once in particular, I remember that a gentleman, who lives beyond *Andover*, coming to my house, when he got on the downs between that town and *Winchester*, at twenty-five miles distance, was surprised much with smoke and a hot smell of fire ; and concluded that *Alresford* was in flames ; but, when he came to that town, he then had apprehensions for the next village, and so on to the end of his journey.

On two of the most conspicuous eminences of this forest stand two *arbours* or *bowers*, made of the boughs of oaks ; the one called *Waldon-lodge*, the other *Brimstone-lodge* : these the keepers renew annually on the feast of St. *Barnabas*, taking the old materials for a perquisite. The farm called *Blackmoor*, in this parish, is obliged to find the posts and brush-wood for the former ; while the farms at *Greatham*, in rotation, furnish for the latter ; and are all enjoined to cut and deliver the materials at the spot. This custom I mention, because I look upon it to be of very remote antiquity.

LETTER VIII

TO THE SAME

On the verge of the forest, as it is now circumscribed, are three considerable lakes, two in *Oakhanger*, of which I have nothing particular to say; and one called *Bin's*, or *Bean's pond*,[1] which is worthy the attention of a naturalist or a sportsman. For, being crowded at the upper end with willows, and with the *carex cespitosa*,[2] it affords such a safe and pleasing shelter to wild ducks, teals, snipes, &c., that they breed there. In the winter this covert is also frequented by foxes, and sometimes by pheasants; and the bogs produce many curious plants. (For which consult Letter XLI to Mr. *Barrington*.[3])

[1] This pond has long since been drained, and cattle now graze upon its bed. *Cf.* Harting's ed., preface, p. 9.—[R. B. S.]

[2] I mean that sort which, rising into tall hassocks, is called by the foresters *torrets*: a corruption, I suppose of turrets.—[G. W.]

Note.—In the beginning of the summer 1787, the royal forests of *Wolmer* and *Holt* were measured by persons sent down by government.—[G. W.]

[3] The original edition says "Letter XLII," and this mistake is copied by Bell and other editors.—[R. B. S.]

Widgeon.

1/5 Life size

By a *perambulation* of *Wolmer forest* and *The Holt*, made in 1635, and the eleventh year of *Charles* the First (which now lies before me), it appears that the limits of the former are much circumscribed. For, to say nothing of the farther side, with which I am not so well acquainted, the bounds on this side, in old times, came into *Binswood*; and extended to the ditch of *Ward le ham-park*, in which stands the curious mount called *King John's Hill*, and *Lodge Hill*; and to the verge of *Hartley Mauduit*, called *Mauduit-hatch*; comprehending also *Short-heath*, *Oakhanger*, and *Oakwoods*; a large district, now private property, though once belonging to the royal domain.

It is remarkable that the term *purlieu* is never once mentioned in this long roll of parchment. It contains, besides the *perambulation*, a rough estimate of the value of the timbers, which were considerable, growing at that time in the district of *The Holt;* and enumerates the officers, superior and inferior, of those joint forests, for the time being, and their ostensible fees and perquisites. In those days, as at present, there were hardly any trees in *Wolmer forest*.

Within the present limits of the forest are three considerable lakes, *Hogmer*, *Cranmer*, and *Wolmer*; all of which are stocked with carp, tench, eels, and perch: but the fish do not thrive well, because the water is hungry, and the bottoms are a naked sand.[1]

A circumstance respecting these ponds, though by no means peculiar to them, I cannot pass over in silence; and that is, that instinct by which in summer all the kine, whether oxen, cows, calves, or heifers, retire constantly to the water during the hotter hours;

[1] Professor Bell adds a note (vol. i. p. 23): "It is remarkable that these three ponds are named respectively after three animals which, formerly indigenous in this country, are now extinct—*Hogmer*, after the wild boar; *Cranmere*, after the crane; and *Wolmer*, anciently Wolvemere, after the wolf, which doubtelss formerly haunted this wild district. The fish mentioned in the text are now, I believe, quite extinct in these ponds."—[R. B. S.]

where, being more exempt from flies, and inhaling the coolness of that element, some belly deep, and some only to mid-leg, they ruminate and solace themselves from about ten in the morning till four in the afternoon, and then return to their feeding. During this great proportion of the day they drop much dung, in which insects nestle; and so supply food for the fish, which would be poorly subsisted but from this contingency. Thus Nature, who is a great economist, converts the recreation of one animal to the support of another! *Thomson*, who was a nice observer of natural occurrences, did not let this pleasing circumstance escape him. He says, in his *Summer*,

> "A various group the herds and flocks compose:
> ———————— on the grassy bank
> Some ruminating lie; while others stand
> Half in the flood, and, often bending, sip
> The circling surface."

Wolmer-pond, so called, I suppose, for eminence sake, is a vast lake for this part of the world, containing, in its whole circumference, 2646 yards, or very near a mile and a half. The length of the north-west and opposite side is about 704 yards, and the breadth of the south-west end about 456 yards. This measurement, which I caused to be made with good exactness, gives an area of about sixty-six acres, exclusive of a large irregular arm at the north-east corner, which we did not take into the reckoning.

On the face of this expanse of waters, and perfectly secure from fowlers, lie all day long, in the winter season, vast flocks of ducks, teals,[1] and widgeons, of various

[1] In a letter from Gilbert White to his brother John, dated 'Selborne, June 26, 1773,' he says: "Some boys killed lately at Oakhanger-ponds some flappers or young wild-ducks: among the rest they took some teals alive; one I saw and turned into James Knight's ponds. Till now I never knew that teals bred in England. So you see information crowds in every day."—(Bell's ed., ii. pp. 12, 25.)—[R. B. S.]

Teal.

¼ Life size

denominations; where they preen and solace, and rest themselves, till towards sunset, when they issue forth in little parties (for in their natural state they are all birds of the night) to feed in the brooks and meadows; returning again with the dawn of the morning. Had this lake an arm or two more, and were it planted round with thick covert (for now it is perfectly naked), it might make a valuable decoy.

Yet neither its extent, nor the clearness of its water, nor the resort of various and curious fowls, nor its picturesque groups of cattle, can render this *meer* so remarkable as the great quantity of coins that were found in its bed about forty years ago. But, as such discoveries more properly belong to the *antiquities* of this place, I shall suppress all particulars for the present, till I enter professedly on my series of letters respecting the more remote history of this village and district.[1]

[1] See vol. ii. "Antiquities of Selborne"; also Lord Selborne's Appendix to Bell's edition (vol. ii. pp. 378–394), on "The Roman-British Antiquities of Selborne."—[R. B. S.]

LETTER IX

TO THE SAME

By way of supplement, I shall trouble you once more on this subject, to inform you that *Wolmer*, with her sister forest *Ayles Holt*, alias *Alice Holt*,[1] as it is called in old records, is held by grant from the crown for a term of years.

The grantees that the author remembers are Brigadier-General *Emanuel Scroope Howe*, and his lady, *Ruperta*, who was a natural daughter of Prince *Rupert* by *Margaret Hughs;* a Mr. *Mordaunt*, of the *Peterborough* family, who married a dowager Lady *Pembroke*; *Henry Bilson Legge* and lady; and now Lord *Stawel*, their son.

The lady of General Howe lived to an advanced age, long surviving her husband; and, at her death, left behind her many curious pieces of mechanism of her father's constructing, who was a distinguished mechanic and artist,[2] as well as warrior; and among the rest, a very complicated clock, lately in possession of Mr. *Elmer*, the celebrated game-painter at *Farnham*, in the county of *Surrey*.

Though these two forests are only parted by a narrow range of enclosures, yet no two soils can be more different; for *The Holt* consists of a strong loam, of a miry nature, carrying a good turf, and abounding with oaks that grow

[1] "In Rot. Inquisit. de statu forest. in Scaccar. 36 Edw. III., it is called *Aisholt*."—[G. W.]

In the same, "Tit. *Woolmer* and *Aisholt* Hantisc. Dominus Rex habet unam capellam in *haia* suâ de Kingesle." "*Haia, sepes, sepimentum, parcus;* a Gall. *haie* and *haye*."—SPELMAN'S *Glossary*.—[G. W.]

[2] This prince was the inventor of *mezzotinto*.—[G. W.]

to be large timber ; while *Wolmer* is nothing but a hungry, sandy, barren waste.

The former being all in the parish of *Binsted*, is about two miles in extent from north to south, and near as much from east to west ; and contains within it many woodlands and lawns, and the *great lodge* where the grantees reside, and a smaller lodge called *Goose-green ;* and is abutted on by the parishes of *Kingsley*, *Frinsham*,[1] *Farnham*, and *Bentley ;* all of which have right of common.

One thing is remarkable, that though *The Holt* has been of old well stocked with fallow-deer, unrestrained by any pales or fences more than a common hedge, yet they were never seen within the limits of *Wolmer ;* nor were the red deer of *Wolmer* ever known to haunt the thickets or glades of *The Holt*.

At present the deer of *The Holt* are much thinned and reduced by the night hunters, who perpetually harass them in spite of the efforts of numerous keepers, and the severe penalties that have been put in force against them as often as they have been detected, and rendered liable to the lash of the law. Neither fines nor imprisonments can deter them ; so impossible is it to extinguish the spirit of sporting which seems to be inherent in human nature.

General *Howe* turned out some *German* wild boars and sows in his forests, to the great terror of the neighbourhood, and, at one time, a wild bull or buffalo ; but the country rose upon them and destroyed them.

A very large fall of timber, consisting of about one thousand oaks, has been cut this spring (viz., 1784) in *The Holt forest ;* one-fifth of which, it is said, belongs to the grantee, Lord *Stawell*. He lays claim also to the lop and top ; but the poor of the parishes of *Binsted* and *Frinsham*,[1] *Bentley* and *Kingsley*, assert that it belongs to them, and assembling in a riotous manner, have actually taken it all away. One man, who keeps a team, has carried home for his share forty stacks of wood. Forty-five of these people his lordship has served with actions. These trees, which

[1] Frensham.—[R. B. S.]

were very sound and in high perfection, were *winter-cut*, viz., in *February* and *March*, before the bark would run. In old times *The Holt* was estimated to be eighteen miles, computed measure from water-carriage, viz., from the town of *Chertsey*, on the *Thames;* but now it is not half that distance, since the *Wey* is made navigable up to the town of *Godalming* in the county of *Surrey*.[1]

[1] Mr. Harting gives the following note on the above passages (ed. "Selborne," p. 32): "Mr. Bennett ascertained that the defendants in these actions, though they made a show of resistance, suffered judgment to go by default. The question of right had, in fact, been tried in 1741, and determined against the claimants. Yet notwithstanding this, so soon after as 1788, on the occasion of another fall of timber in The Holt, the people of Frensham again assembled and carried off openly upwards of six thousand faggots. So difficult is it to convince where interest opposes."

"The formation of the Basingstoke Canal has again reduced the distance of The Holt from water-carriage; and it is now accessible, either at Odiham or Bagman's Castle, within about seven miles."—[R. B. S.]

To Thomas Pennant Esq.
Gil: White.

LETTER X[1]

TO THE SAME

[2] *August* 4, 1767.

[SIR,[3]—Nothing but the obliging notice you were so kind as to take of my trifling observations in the natural way, when I was in town in the spring, and your repeated mention of me in some late letters to my brother, could have emboldened me to have entered into a correspondence with you: in which though my vanity cannot suggest to me that I shall send you any information worthy your attention; yet the communication of my thoughts to a gentleman so distinguished for these kinds of studies will unavoidably be attended with satisfaction and improvement on my side.]

It has been my misfortune never to have had any neighbours whose studies have led them towards the pursuit of natural knowledge: so that, for want of a com-

[1] This is the first of the actual letters sent to Pennant. As published it differs considerably from the letter as it was originally written, and it is evident that the author revised his MS. with great care before publishing it in book form. I have ventured in the present edition to restore a few of the notes from the original letters where they seem to lend additional interest to the study of Gilbert White as a man. This has been already done in a small degree by Professor Bell, who also had the original letters before him when he wrote his valuable edition of 'Selborne.' Any additions to the original text from the MS. letters are enclosed in square brackets [ ].—[R. B. S.]

[2] In the published work the date of this letter is given as Aug. 4, 1767, but it was actually written on "Aug. 10th."—[R. B. S.]

[3] The author suppressed this first paragraph in his published work, but it is extremely interesting as showing the circumstances under which Gilbert White was induced to correspond with Pennant, to the great advantage of the latter. Professor Bell also reproduces the paragraph, and adds, "At this time so little was he acquainted with Pennant that he did not know his Christian name, and the letter is addressed to — Pennant, Esq., at Downing, in Flintshire, North Wales." —(Bell's ed., vol. i. p. 27 *note.*)—[R. B. S.]

panion to quicken my industry and sharpen my attention, I have made but slender progress in a kind of information to which I have been attached from my childhood.

As to *swallows* (*hirundines rusticæ*) being found in a torpid state during the winter in the isle of *Wight*, or any part of this country, I never heard any such account worth attending to.[1] But a clergyman, of an inquisitive turn, assures me, that, when he was a great boy, some workmen, in pulling down the battlements of a church tower early in the spring, found two or three *swifts* (*hirundines apodes*) among the rubbish, which were, at first appearance, dead; but, on being carried towards the fire, revived. He told me that, out of his great care to preserve them, he put them in a paper-bag, and hung them by the kitchen fire, where they were suffocated.

Another intelligent person has informed me that, while he was a schoolboy at *Brighthelmstone*, in *Sussex*, a great fragment of the chalk-cliff fell down one stormy winter on the beach; and that many people found *swallows* among the rubbish: but, on my questioning him whether he saw any of those birds himself; to my no small disappointment, he answered me in the negative; but that others assured him they did.

Young broods of *swallows* began to appear this year on *July* the 11th, and young *martins* (*hirundines urbicæ*) were then fledged in their nests. Both species will breed again once. For I see by my *fauna* of last year, that young broods came forth so late as *September* the eighteenth. Are not these late hatchings more in favour of hiding than migration? Nay, some young martins remained in their nests last year so late as *September* the twenty-ninth; and yet they totally disappeared with us by the fifth of *October*.[2]

[1] The supposed torpidity of Swallows and Swifts during the winter months was a subject which interested the author greatly, and he returns to it again and again.—[R. B. S.]

[2] The latest date on which I have seen the House-martin was on the 22nd of November, when a small flock passed over Avington Park, in Hampshire, late in the afternoon. Captain G. E. Shelley and I fired several shots at the birds, but they were at too great a height: of the identity of the species there was no

How strange is it that the *swift*, which seems to live exactly the same life with the *swallow* and *house-martin*, should leave us before the middle of *August* invariably! while the latter stay often till the middle of *October;* and once I saw numbers of house-martins on the seventh of *November*. The *martins* and *red-wing fieldfares* were flying in sight together; an uncommon assemblage of summer and winter-birds!

A little yellow bird (it is either a species of the *alauda trivialis*, or rather perhaps of the *motacilla trochilus*) still continues to make a sibilous shivering noise in the tops of tall woods.[1] The *stoparola* of *Ray* (for which we have as yet no name in these parts) is called, in your *Zoology*, the *fly-catcher*.[2] There is one circumstance characteristic of this bird, which seems to have escaped observation, and that is, it takes its stand on the top of some stake or post, from whence it springs forth on its prey, catching a fly in the air, and hardly ever touching the ground, but returning still to the same stand for many times together.

I perceive there are more than one species of the *motacilla trochilus:* Mr. Derham supposes, in *Ray's Philos. Letters*, that he has discovered three. In these there is again an instance of some very common birds that have as yet no *English* name.[3]

Mr. *Stillingfleet* makes a question whether the black-cap (*motacilla atricapilla*) be a bird of passage or not: I think there is no doubt of it: for, in April, in the first fine weather, they come trooping, all at once, into these parts,

doubt. In the British Museum there is a specimen obtained near Brighton on the 22nd of November 1883, apparently a belated young bird. Yarrell contributed a note to Bennett's edition, that upwards of a hundred Martins were seen collected on the 13th of November at Dover. Professor Bell mentions an instance of Martins being seen on the 22nd of November 1873 by Mr. Montague Knight of Chawton House, about four miles from Selborne (Bell's ed., p. 28 *note*). See also Letter XXI (p. 91), where Gilbert White records a Martin as having been seen in a sheltered hollow on the 26th of November, and adds, "I am now perfectly satisfied that they do not all leave this island in the winter."—[R. B. S.]

[1] This was probably the Wood-warbler (*Phylloscopus sibilator*), more fully discussed by the author in subsequent letters (see pp. 79–82).—[R. B. S.]

[2] *Muscicapa grisola.*—[R. B. S.] [3] See Letter XIX (*postea*, p. 79).—[R. B. S.]

but are never seen in the winter. They are delicate songsters.[1]

Numbers of *snipes* breed every summer in some moory ground on the verge of this parish. It is very amusing to see the cock bird on wing at that time, and to hear his piping and humming notes.[2]

I have had no opportunity yet of procuring any of those mice which I mentioned to you in town. The person that brought me the last says they are plenty in harvest, at which time I will take care to get more; and will endeavour to put the matter out of doubt, whether it be a non-descript species or not.

I suspect much there may be two species of water-rats. *Ray* says, and *Linnæus* after him, that the water-rat is web-footed behind. Now I have discovered a rat on the banks of our little stream that is not web-footed, and yet is an excellent swimmer and diver: it answers exactly to the *mus amphibius* of *Linnæus* (see *Syst. Nat.*) which he says "*natat in fossis et urinatur.*" I should be glad to procure one "*plantis palmatis.*" *Linnæus* seems to be in a puzzle about his *mus amphibius*, and to doubt whether it differs from his *mus terrestris;* which if it be, as he allows, the "*mus agrestis capite grandi brachyuros,*" of *Ray*, is widely different from the water-rat, both in size, make, and manner of life.[3]

[1] That a stray Blackcap occasionally stays with us during the winter can, I think, scarcely be doubted, but the species is otherwise migratory, visiting Senegambia in winter, as well as North-East Africa and the Mediterranean countries. The British Museum possesses a male Blackcap shot near Christiansund, in Northern Norway, on the 1st of December 1897! Blackcaps are to be noticed in some numbers in the neighbourhood of London. They nest in the old garden of Little Sutton near my house at Chiswick, and many are to be seen feeding on the elder-berries in autumn within a few yards of my study-window.—[R. B. S.]

[2] See Letter XVI (*postea*, p. 65).—[R. B. S.]

[3] Professor Bell, who was the greatest authority on British Mammals in his day, gives the following interesting note on these species, which had also been dealt with by Mr. Bennett in his edition: "This confusion, as Mr. Bennett observes, was originated by Willughby, copied by Ray, and appears to have given rise to the complication by Linnæus, from which White's doubts and perplexities were derived. The fact is that the *Water-Vole*, as it ought to be called, is, on the one hand, quite distinct from the family *Muridæ*, to which the rats

Harvest-Mouse.

2/5 Life size.

As to the *falco*, which I mentioned in town, I shall take the liberty to send it down to you into *Wales;* presuming on your candour, that you will excuse me if it should appear as familiar to you as it is strange to me. Though mutilated "*qualem dices . . . antehac fuisse, tales cum sint reliquiæ!*"

It haunted a marshy piece of ground in quest of wild-ducks and snipes; but, when it was shot, had just knocked down a rook, which it was tearing in pieces. I cannot make it answer to any of our *English* hawks; neither could I find any like it at the curious exhibition of stuffed birds in *Spring Gardens*.[1] I found it nailed up at the end of a barn, which is the countryman's museum.

The parish I live in is a very abrupt, uneven country, full of hills and woods, and therefore full of birds.

belong, in structure as well as in habits; and on the other, the hinder feet are not webbed, though the toes are connected to a short distance from the base.

"The Water-vole frequented both the streams of the village, near their junction, a few years ago; and I have repeatedly seen it sporting in that which runs through the meadow below the vicarage. I have not, however, seen one for some years past, and believe that it has become extinct, though its holes still remain in the bank. The common brown rat, from its power of swimming well, appears to have given rise to some mistakes among the inhabitants of the place, who have occasionally confounded the two animals."—(Bell's ed., vol. i. p. 30 *note.*)

See also Letter XXVI to Pennant (*postea*, p. 113).—[R. B. S.]

[1] "In the Haymarket," says the original letter, which concludes—

"I am, with the greatest regard,
Your most humble servant
GIL: WHITE.

"August 10, 1767,
at Selborne,
near Alton,
Hants."

—[R. B. S.]

LETTER XI

TO THE SAME

SELBORNE, *September 9th*, 1767.

[I HAD the favour of your letter; and am much obliged to you for the candour with which you received my trifling observations.]

It will not be without impatience that I shall wait for your thoughts with regard to the *falco;* as to its weight, breadth, &c., I wish I had set them down at the time: but, to the best of my remembrance, it weighed two pounds and eight ounces, and measured, from wing to wing, thirty-eight inches. Its *cere* and feet were yellow, and the circle of its eyelids a bright yellow. As it had been killed some days, and the eyes were sunk, I could make no good observation on the colour of the pupils and the *irides*.[1]

The most unusual birds I ever observed in these parts were a pair of *hoopoes* (*upupa*), which came several years ago in the summer, and frequented an ornamented piece of ground, which joins to my garden, for some weeks. They used to march about in a stately manner, feeding in

[1] Pennant apparently determined that the specimen sent by Gilbert White was a Peregrine falcon, and the latter acquiesced in this identification. (See his Letter LVII to Daines Barrington.) It was probably a young Peregrine in striped plumage, and if the iris had been yellow, the colour would not have escaped White's observation, even if 'the eyes were sunk.' The note by the author that the 'circle of its eyelids' was 'a bright yellow' seems not unnaturally to have puzzled some of the naturalists who have edited his letters, as it is not a correct description of the Peregrine's eyelid, and was probably due to the stale condition of the specimen when Gilbert White first examined it.—[R. B. S.]

Hoopoe

1/3 Life size.

the walks, many times in the day;[1] and seemed disposed to breed in my outlet;[2] but were frighted and persecuted by idle boys, who would never let them be at rest.

Three *gross-beaks* (*loxia coccothraustes*)[3] appeared some years ago in my fields, in the winter; one of which I shot: since that, now and then one is occasionally seen in the same dead season.

A *crossbill* (*loxia curvirostra*)[4] was killed last year in this neighbourhood.

Our streams, which are small, and rise only at the end of the village, yield nothing but the *bull's head* or *miller's thumb* (*gobius fluviatilis capitatus*),[5] the *trout* (*trutta fluviatilis*),[6] the *eel* (*anguilla*),[7] the *lampern* (*lampœtra parva et fluviatilis*),[8] and the *stickle-back* (*pisciculus aculeatus*).[9]

[1] In Budapest, in 1891, the late John Xantus showed me Hoopoes frequenting his garden in exactly the same manner as here described by Gilbert White. Bell mentions several more instances of the occurrence of the Hoopoe near Selborne. —[R. B. S.]

[2] As appears from the original letter to Pennant, Gilbert White at first believed that this pair of Hoopoes actually nested in his meadow, "but," he adds, "before I knew anything of the matter, the nest and eggs (neither of which I saw) were taken by some idle boys." The nest, as reported to the author, could not have been that of the Hoopoes, and the event was therefore very properly omitted in his published work. I only allude to the circumstance here to show the scrupulous punctiliousness of Gilbert White's mature publication.—[R. B. S.]

[3] The Hawfinch (*Coccothraustes coccothraustes*) was apparently a rare bird in Hampshire in Gilbert White's time, but of recent years the range of the species in England has been found to be much more extensive than was formerly supposed, and it is now known to nest regularly in most of the southern counties. Professor Bell mentions several specimens from Selborne that came under his notice, and states that it had repeatedly bred in Captain Chawner's park at Newton Valence.—(Bell's ed., vol. i. p. 32 *note.*)—[R. B. S.]

[4] Crossbills (*Loxia curvirostra*) were observed in some numbers in the southern counties in 1898. Dr. F. D. Godman informs me that he saw several in his woods at Horsham, and believes that they had nested there.—[R. B. S.]

[5] *Cottus gobio*, Linn.—[R. B. S.]

[6] *Salmo fario*, Linn.—[R. B. S.]

[7] *Anguilla vulgaris.*—[R. B. S.]

[8] *Ammocœtes branchialis.* Professor Bell remarks: "This fish is rarely found; I do not remember to have seen it more than once or twice. It lives entirely in the mud; and an intelligent person residing near Oakhanger Pond, the most likely place for its occurrence, is not acquainted with it."—(Bell's ed., vol. i. p. 32 *note.*)—[R. B. S.]

[9] "Of the six species of stickle-back described by Yarrell as British, the only one which I am aware of as inhabiting the stream at Selborne is the common three-spined *Gasterosteus trachurus.*"—(Bell's ed., vol. i. p. 32 *note.*)—[R. B. S.]

We are twenty miles from the sea, and almost as many from a great river, and therefore see but little of sea-birds. As to wild fowls, we have a few teems of *ducks* bred in the moors where the snipes breed; and multitudes of *widgeons* and *teals* in hard weather frequent our lakes in the forest.

Having some acquaintance with a tame *brown owl*,[1] I find that it casts up the fur of mice and the feathers of birds in pellets, after the manner of hawks: when full, like a dog, it hides what it cannot eat.

The young of the barn-owl are not easily raised, as they want a constant supply of fresh mice: whereas the young of the brown owl will eat indiscriminately all that is brought; snails, rats, kittens, puppies, magpies, and any kind of carrion or offal.

The house-martins have eggs still, and squab young. The last swift I observed was about the twenty-first of *August:* it was a straggler.

Red-starts, fly-catchers, white-throats, and *reguli non cristati,* still appear; but I have seen no *black-caps* lately.

I forgot to mention that I once saw, in *Christ Church* College quadrangle in *Oxford,* on a very sunny warm morning, a *house-martin* flying about, and settling on the parapet, so late as the 20th of *November.*

At present I know only two species of *bats,* the common *vespertilio murinus*[2] and the *vespertilio auribus.*[3]

[1] *Syrnium aluco* (the Tawny or Wood-owl).—[R. B. S.]

[2] The Pipistrelle is here intended.—[R. B. S.]

[3] Professor Bell's note on the Bats of Selborne is very interesting. He writes: "The Bats which I have found at Selborne are the Noctule (*Scotophilus noctula*), the Pipistrelle (*Sc. pipistrellus*), the Reddish-grey Bat (*Vespertilio nattereri*), Daubenton's Bat (*V. daubentonii*), and the Long-eared Bat (*Plecotus auritus*). Of the first of these White was undoubtedly the first observer in this country; and he was not sufficiently acquainted with the zoological literature of the Continent to be aware that as early as 1759 Daubenton had described it in the Memoirs of the Academy, with a figure of its head, and that Buffon had subsequently, but before White's discovery, given it a place in his great work, with a plate (vol. iii. p. 128, pl. 18, f. 1). White's name, *altivolans,* is very appropriate. I have seen it at Selborne for several successive years, passing up and down the whole length of the valley between the Lythe and Dorton wood, flying as high as the

Long eared Bat.
Pipistrelle.

½ Life size

I was much entertained last summer with a tame bat, which would take flies out of a person's hand. If you gave it anything to eat, it brought its wings round before the mouth, hovering and hiding its head in the manner of birds of prey when they feed. The adroitness it showed in shearing off the wings of the flies, which were always rejected, was worthy of observation, and pleased me much. Insects seemed to be most acceptable, though it did not refuse raw flesh when offered: so that the notion, that bats go down chimneys and gnaw men's bacon, seems no improbable story.[1] While I amused myself with this wonderful quadruped, I saw it several times confute the vulgar opinion, that bats when down upon a flat surface cannot get on the wing again, by rising with great ease from the floor. It ran, I observed, with more dispatch than I was aware of; but in a most ridiculous and grotesque manner.

Bats drink on the wing, like swallows, by sipping the surface, as they play over pools and streams. They love to frequent waters, not only for the sake of drinking, but on account of insects, which are found over them in the greatest plenty. As I was going, some years ago, pretty late, in a boat from *Richmond* to *Sunbury*, on a warm summer's evening, I think I saw myriads of bats between the two places: the air swarmed with them all along the *Thames*, so that hundreds were in sight at a time.

[After a request for "the seeds of any of the following

tops of the trees on the hills on each side, and occasionally dipping towards the stream that flows through the valley after insects, or possibly to drink. I have also seen a pair of them coming at twilight out of a large beech near the spot where Gilbert White's summer-house stood, and which I could not but fancy might have been the place where it was first seen by him. . . . Of the other species found at Selborne, *V. nattereri* was taken among the rafters of a cottage and *V. daubentonii* in my cellar. *Plecotus auritus* is, as far as I have observed, less common here than in many other places."—(Bell's ed., vol. i. pp. 33, 34 *note.*)—[R. B. S.]

[1] On this Professor Bell remarks: "There is no doubt of the fact alluded to. I have known more than one instance of bacon being gnawed by bats when hung in a cottager's wide chimney to be smoked."—(Bell's ed., vol. i. p. 34 *note.*)—[R. B. S.]

plants, which we never see in the south: viz. the *Cypripedium calceolus, Pinguicula vulg.*, &c," the letter concludes,

I am, with the greatest esteem,

Your most obliged, and obedient servant,

GIL: WHITE.

Selborne, near Alton,
*Septem*r 9, 1767.]

LETTER XII

TO THE SAME

November 4th, 1767.

SIR,—It gave me no small satisfaction to hear that the *falco*[2] turned out an uncommon one. I must confess I should have been better pleased to have heard that I had sent you a bird that you had never seen before; but that, I find, would be a difficult task.

I have procured some of the mice mentioned in my former letters, a young one and a female with young, both of which I have preserved in brandy. From the colour, shape, size, and manner of nesting, I make no doubt but that the species is nondescript. They are much smaller, and more slender, than the *mus domesticus medius* of *Ray;* and have more of the squirrel or dormouse colour: their belly is white; a straight line along their sides divides the shades of their back and belly. They never enter into houses; are carried into ricks and barns with the sheaves; abound in harvest; and build their nests amidst the straws of the corn above the ground, and sometimes in thistles. They breed as many as eight at a litter, in a little round nest composed of the blades of grass or wheat.

One of these nests I procured this autumn, most artificially platted, and composed of the blades of wheat; perfectly round, and about the size of a cricket-ball; with the aperture so ingeniously closed, that there was no discovering to what part it belonged. It was so compact and well filled, that it would roll across the table without

[1] This letter is dated from "Selborne, near Alton, Hants, *Nov*^{r} 6, 1767." —[R. B. S.]

[2] This hawk proved to be the *falco peregrinus;* a variety.—[G. W.]

being discomposed, though it contained eight little mice that were naked and blind. As this nest was perfectly full, how could the dam come at her litter respectively so as to adminster a teat to each? Perhaps she opens different places for that purpose, adjusting them again when the business is over: but she could not possibly be contained herself in the ball with her young, which moreover would be daily increasing in bulk. This wonderful procreant cradle, an elegant instance of the efforts of instinct, was found in a wheat-field suspended in the head of a thistle.[1]

A gentleman, curious in birds, wrote me word that his servant had shot one last *January*, in that severe weather, which he believed would puzzle me. I called to see it this summer, not knowing what to expect: but, the moment I took it in hand, I pronounced it the male *garrulus bohemicus* or *German* silk-tail, from the five peculiar crimson tags or points which it carries at the ends of five of the short remiges.[2] It cannot, I suppose, with any propriety, be called an *English* bird: and yet I see, by *Ray's "Philosophical Letters,"* that great flocks of them, feeding on haws, appeared in this kingdom in the winter of 1685.[3]

[1] The Harvest Mouse (*Mus minutus*, Pall.) was first introduced to notice as a British animal by Gilbert White, and appears in Pennant's 'British Zoology' on White's authority. Professor Bell points out, however, that it had been previously known to Montagu, but had not been described by him in print. It is fairly common in the southern and midland counties of England, reaching to Southern Scotland, but it is not definitely determined as an Irish species (*cf.* Lydekker, 'Handb. Brit. Mamm.' 1895, p. 182).—[R. B. S.]

[2] The Wax-wing (*Ampelis garrulus*).—[R. B. S.]

[3] Sir William Jardine in his edition of White's "Selborne," gives the following note: "The letter alluded to was from Mr. Johnson to Mr. Ray, in 1686. 'On the back-side you have the description of a new English bird. They came near us in great flocks like fieldfares, and fed upon haws as they do.' And in another letter from Mr. Thoresby to Mr. Ray, 1703, it is said, 'I am tempted to think the German Silk-tail is become natural to us, there being no less than three killed nigh this town the last winter.' Thus has the Wax-wing occurred occasionally in this county, but there is no record of any great numbers appearing together since Ray's time, until in 1849–50, when an unusual number visited us. The direction of the flight was from east to west, and the principal localities where they occurred, were the eastern or coast districts of Durham and Yorkshire in the north, and of Norfolk, Suffolk, Essex, and Kent in the south. Their occurrence reached over a period from November 1849 to March 1850, January being the principal month of their appearance; no fewer than 429 are recorded to have

Waxwing.

2/3 Life size

The mention of haws puts me in mind that there is a total failure of that wild fruit, so conducive to the support of many of the winged nation. For the same severe weather, late in the spring, which cut off all the produce of the more tender and curious trees, destroyed also that of the more hardy and common.

Some birds, haunting with the missel-thrushes, and feeding on the berries of the yew-tree, which answered to the description of the *merula torquata*, or *ring-ouzel*, were lately seen in this neighbourhood. I employed some people to procure me a specimen, but without success. See Letter VIII.

Query.—Might not *Canary* birds be naturalised to this climate, provided their eggs were put, in the spring, into the nests of some of their congeners, as goldfinches, greenfinches, &c.? Before winter perhaps they might be hardened, and able to shift for themselves.

About ten years ago I used to spend some weeks yearly at *Sunbury*, which is one of those pleasant villages lying on the *Thames*, near *Hampton Court*. In the autumn, I could not help being much amused with those myriads of the swallow kind which assemble in those parts. But what struck me most was, that, from the time they began to congregate, forsaking the chimneys and houses, they roosted every night in the osier-beds of the aits of that river.[1]

been killed in that month, and during the whole time they were observed, 586 specimens were known to have been obtained—a very wanton destruction."

The Wax-wing, which is an inhabitant of the Arctic Regions of both Hemispheres, seems, at certain epochs, to undergo an impulse of migration, similar to that of Pallas' Sand-Grouse (*Syrrhaptes paradoxus*) and the Nutcracker (*Nucifraga brachyrhyncha*), when numbers of individuals migrate westwards and reach the British Islands. Thus, since Gilbert White's day, an invasion of Wax-wings has taken place in 1830–31, 1834–35, 1849–50, 1866–67, 1872–73, and 1892–93. In the winter of 1872–73 I myself saw several specimens which had been captured in the Highgate woods close to London.—[R. B. S.]

[1] Professor Bell (1877) records an observation of his father, written "nearly a century ago," of the gatherings of Swallows in the aits off Chelsea! (vol. i. p. 37 *note*).

To this day the reed-beds and osiers of the Thames are the resort of myriads of Swallows and Martins in the autumn, just before the season of migration. The late John Gould was so struck with the phenomenon, that he had a picture of one

Now this resorting towards that element, at that season of the year, seems to give some countenance to the northern opinion (strange as it is) of their retiring under water. A *Swedish* naturalist [1] is so much persuaded of that fact, that he talks, in his calendar of *Flora*, as familiarly of the swallow's going under water in the beginning of *September*, as he would of his poultry going to roost a little before sunset.

An observing gentleman in *London* writes me word that he saw an house-martin, on the twenty-third of last *October*, flying in and out of its nest in the *Borough*. And I myself, on the twenty-ninth of last *October* (as I was travelling through *Oxford*), saw four or five swallows hovering round and settling on the roof of the county hospital.

Now is it likely that these poor little birds (which perhaps had not been hatched but a few weeks) should, at that late season of the year, and from so midland a county, attempt a voyage to *Goree* or *Senegal*, almost as far as the *equator?* [2]

I acquiesce entirely in your opinion—that, though most of the swallow kind may migrate, yet that some do stay behind and hide with us during the winter.[3]

As to the short-winged soft-billed birds, which

of the gatherings of Sand-Martins prepared for his "Birds of Great Britain" (vol. ii. pl. 8). In the autumn of 1872 I was myself witness to an enormous gathering of Swallows, Sand-Martins, and Yellow Wagtails (*Motacilla campestris*) in the reed-beds near Pagham Harbour, in Sussex: the birds assembled in these reed-beds to roost, before they finally took flight across the Channel. Only recently (Sept. 14, 1899) I found a large assemblage of Swallows and Sand-Martins gathered together, evidently on migration, close to Barnes Bridge, and as twilight fell, commencing to roost in some small osier-beds on the banks of the Thames in that vicinity. See further remarks by Gilbert White in Letter XXXIII (*postea*, p. 134), and Letter IX to Daines Barrington.—[R. B. S.]

[1] Linnæus.—[R. B. S.]

[2] See "Adanson's Voyage to Senegal."—[G. W.]

[3] The Common Swallow (*Hirundo rustica*) has been found during our winter in nearly every part of Africa, and occurs plentifully in the Cape Colony. The House-Martin (*Chelidon urbica*) and the Sand-Martin (*Clivicola riparia*) have both been found in the Transvaal, but very sparingly, and where the millions of these birds which are reared during the European summer pass the winter months, is still a mystery.—[R. B. S.]

come trooping in such numbers in the spring, I am at a loss even what to suspect about them. I watched them narrowly this year, and saw them abound till about *Michaelmas*, when they appeared no longer. Subsist they cannot openly among us, and yet elude the eyes of the inquisitive: and, as to their hiding, no man pretends to have found any of them in a torpid state in the winter. But with regard to their migration, what difficulties attend that supposition! that such feeble bad fliers (who the summer long never flit but from hedge to hedge) should be able to traverse vast seas and continents in order to enjoy milder seasons amidst the regions of *Africa!*[1]

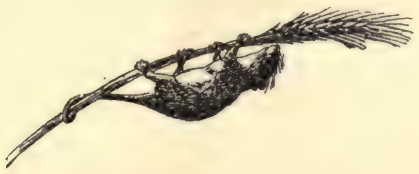
[Begging the continuance of y^r^ most agreeable correspondence I conclude with great esteem,

Your most obedient servant,

GIL: WHITE.

P.S.—What parts of England does the Goss-Hawk frequent?]

[1] And yet they *do!* No one would have more rejoiced at the discovery of the winter homes of our small British migrants than Gilbert White. The Nightingale and Spotted Flycatcher wend their way to the Gold Coast, where also the Garden Warbler, the Willow Warbler, and the Wood Warbler are found during our winter. The Blackcap then visits Senegambia, while the little Sedge Warbler reaches South Africa in its migration, accompanied by the Willow Warbler, the Garden Warbler, and the Spotted Flycatcher, to this distant portion of the earth. Specimens of all these Warblers, from the winter localities above named, are in the British Museum. See Letter XXXIII to Pennant (*postea*, p. 134), and Letter IX to Barrington.—[R. B. S.]



LETTER XIII

TO THE SAME

SELBORNE, *Jan. 22nd*, 1768

SIR,—As in one of your former letters you express the more satisfaction from my correspondence on accou of my living in the most southerly county; so now I m return the compliment, and expect to have my curiosi gratified by your living much more to the north.

For many years past I have observed that towar *Christmas* vast flocks of chaffinches have appeared in t fields; many more, I used to think, than could be hatch in any one neighbourhood. But, when I came to obser them more narrowly, I was amazed to find that th seemed to me to be almost all hens. I communicat my suspicions to some intelligent neighbours, who, aft taking pains about the matter, declared that they al thought them all mostly females: at least fifty to or This extraordinary occurrence brought to my mind t remark of *Linnæus;* that "before winter all their h chaffinches migrate through *Holland* into *Italy*." Now want to know, from some curious person in the nort whether there are any large flocks of these finches wi them in the winter, and of which sex they mostly consis For, from such intelligence, one might be able to jud whether our female flocks migrate from the other end the island, or whether they come over to us from t continent.[1]

[1] Both Sir William Jardine in a footnote to his edition (p. 39) and Profes Newton, as quoted by Bell (vol. i. p. 39 *note*), incline to the belief that supposed superabundance of female Chaffinches may arise from the faulty

We have, in the winter, vast flocks of the common linnets: more, I think, than can be bred in any one district. These, I observe, when the spring advances, assemble on some tree in the sunshine, and join all in a gentle sort of chirping, as if they were about to break up their winter quarters and betake themselves to their proper summer homes. It is well known at least, that the swallows and the fieldfares do congregate with a gentle twittering before they make their respective departure.

You may depend on it that the bunting, *emberiza miliaria*, does not leave this county in the winter.[1] In *January* 1767, I saw several dozen of them, in the midst of a severe frost, among the bushes on the downs near *Andover:* in our woodland enclosed district it is a rare bird.

Wagtails, both white and yellow, are with us all the

crimination of naturalists as regards the young males, which have not attained their full plumage, and may thus be confounded with the adult females. In his original letter Gilbert White says: "For many years past I have observed that about November vast flocks of chaffinches," &c. At that time of year, "towards Christmas," there can be no question of confounding a male and female Chaffinch, for at the first autumn moult the young male puts on his full plumage, obscured slightly no doubt by the overlying winter plumage. The full spring dress in this and in other species of Finches is gained, not by a moult, but by the shedding of the brown edges of the feathers, and at any time during the winter the perfect spring plumage can be detected by lifting the feathers, and discounting the effect of the dusky margins sooner or later to be shed. In a mild winter the young males would soon commence to throw off their dull aspect, and would not be distinguishable from the old males, which go through the same transformation. Some of the changes of plumage are fully described by me in the "Catalogue of Birds" (vol. xiii. p. 172). Mr. Harting says that the separation of the sexes in winter is not universally the rule, for in some parts of the country many individuals of both sexes remain throughout the winter and do not flock (ed. Selborne, p. 47 *note*).—[R. B. S.]

[1] Professor Bell (vol. i. p. 40 *note*) confirms Gilbert White's opinion that the Common Bunting is a rare bird near Selborne. He also alludes to the fact that White never appears to have detected the Cirl Bunting (*Emberiza cirlus*) in the neighbourhood, though Bell found it actually nesting in his garden in the year 1848. It was recorded for the first time as a British species by Montagu after White's death. Bell also mentions the occurrence of the Brambling (*Fringilla montifringilla*) in the beech-woods near Selborne, another species supposed to have been undetected by Gilbert White.—[R. B. S.]

winter.[1] Quails crowd to our southern coast, and are often killed in numbers by people that go on purpose.

Mr. *Stillingfleet*, in his Tracts, says that "if the wheat-ear (*œnanthe*)[2] does not quit *England*, it certainly shifts places; for about harvest they are not to be found, where there was before great plenty of them." This well accounts for the vast quantities that are caught about that time on the south downs near *Lewes*, where they are esteemed a delicacy. There have been shepherds, I have been credibly informed, that have made many pounds in a season by catching them in traps. And though such multitudes are taken, I never saw (and I am well acquainted with those parts) above two or three at a time; for they are never gregarious. They may perhaps migrate in general; and, for that purpose, draw towards the coast of *Sussex* in autumn: but that they do not all withdraw I am sure; because I see a few stragglers in many counties, at all times of the year, especially about warrens and stone quarries.

I have no acquaintance, at present, among the gentlemen of the navy: but have written to a friend, who was a sea-chaplain in the late war, desiring him to look into

[1] The Pied Wagtail (*Motacilla lugubris*) is almost entirely a British bird, but is subject to a partial migration, as the species visits in winter the south-west of France and Spain. Many, however, remain throughout the winter in England. The White Wagtail (*Motacilla alba*) is a tolerably regular visitor to Great Britain every year, and has been known to breed with us. It is a wide-spread species in Europe and Northern Asia during the nesting-season, and migrates to Northern Africa and India in winter. The only other species of Wagtail found in winter in England is the Grey Wagtail (*Motacilla melanope*), a bird of nearly the same distribution as the White Wagtail. The 'Yellow' Wagtail of our fields in summer is *Motacilla campestris*. It is known as Ray's Wagtail, and leaves for West and South Africa in the autumn. It would be the Grey Wagtail to which Gilbert White was alluding.—[R. B. S.]

[2] Professor Bell (vol. i. p. 41 *note*) says that the Wheatear is a rare bird in the vicinity of Selborne, though 'multitudinous' on the downs in Hampshire. The fact that Gilbert White mentions his observation of Wheatears "at all times of the year" makes one doubt whether he had not also the Stonechat (*Pratincola rubicola*) in his mind. The Wheatear (*Saxicola œnanthe*) leaves England in the autumn and betakes itself to Senegambia and North-eastern Africa, reaching to the Equatorial provinces of the latter continent.—[R. B. S.]

Wheatear.

½ Life size.

his minutes, with respect to birds that settled on their rigging during their voyage up or down the channel. What *Hasselquist* says on that subject is remarkable; there were little short-winged birds frequently coming on board his ship all the way from our channel quite up to the *Levant*, especially before squally weather.

What you suggest, with regard to *Spain*, is highly probable. The winters of *Andalusia* are so mild, that, in all likelihood, the soft-billed birds that leave us at that season may find insects sufficient to support them there.

Some young man, possessed of fortune, health, and leisure, should make an autumnal voyage into that kingdom; and should spend a year there, investigating the natural history of that vast country. Mr. *Willughby*[1] passed through that kingdom on such an errand; but he seems to have skirted along in a superficial manner and an ill-humour, being much disgusted at the rude, dissolute manners of the people.

I have no friend left now at *Sunbury* to apply to about the swallows roosting on the aits of the *Thames:* nor can I hear any more about those birds which I suspected were *merulæ torquatæ*.

As to the small mice, I have farther to remark, that though they hang their nests for breeding up amidst the straws of the standing corn, above the ground; yet I find that, in the winter, they burrow deep in the earth, and make warm beds of grass: but their grand rendezvous seems to be in corn-ricks, into which they are carried at harvest. A neighbour housed an oat-rick lately, under the thatch of which were assembled near an hundred, most of which were taken; and some I saw. I measured them; and found that, from nose to tail, they were just two inches and a quarter, and their tails just two inches long. Two of them, in a scale, weighed down just one copper half-penny, which is about the third of an ounce avoirdupois: so that I suppose they are the smallest quadrupeds in this island. A full-grown *Mus medius domesticus*

[1] See "Ray's Travels," p. 466.—[G. W.]

weighs, I find, one ounce lumping weight, which is more than six times as much as the mouse above ; and measures from nose to rump four inches and a quarter, and the same in its tail. We have had a very severe frost and deep snow this month. My thermometer was one day fourteen degrees and a half below the freezing-point, within doors. The tender evergreens were injured pretty much. It was very providential that the air was still, and the ground well covered with snow, else vegetation in general must have suffered prodigiously. There is reason to believe that some days were more severe than any since the year 1739–40.[1]

[Your friend Mr. Barrington (to whom I am an entire stranger) has been so obliging as to make me a present of one of his Naturalist's Journals, which I hope to fill in the course of the year. Hoping you will excuse the unreasonable length of this letter

I conclude with great regard,

Y^r^ obedient servant

GIL: WHITE.

SELBORNE, *Jan.* 22, 1768.

P.S.—I have just ascertained the Nut-hatch, *sitta:* it is not a common bird with us. This last frost brought us no new fowls.]

[1] See Letters LXI, LXII to Barrington.—[R. B. S.]

LETTER XIV

TO THE SAME

SELBORNE, *March 12th*, 1768.

DEAR SIR,—If some curious gentleman would procure the head of a fallow-deer, and have it dissected, he would find it furnished with two spiracula, or breathing-places, besides the nostrils; probably analogous to the *puncta lachrymalia* in the human head. When deer are thirsty they plunge their noses, like some horses, very deep under water, while in the act of drinking, and continue them in that situation for a considerable time; but, to obviate any inconveniency, they can open two vents, one at the inner corner of each eye, having a communication with the nose.[2] Here seems to be an extraordinary provision

[1] The date of the actual letter was "March 14, 1768."—[R. B. S.]

[2] Sir William Jardine writes: "This short letter is devoted entirely to one subject, to which White's attention was most probably directed by his visits to the deer in Wolmer Forest; it is one of those which requires explanation, especially in a popular work so much read as 'Selborne,' and the very error into which White has fallen with his remarks will lead to the future explanation of a structure which even at this time is not completely understood. The statement in the letter, 'When deer are thirsty,' &c., is quite correct so far as 'they plunge their noses,' but the nostril is then not used, and the whole will is exerted in quenching a thirst at the time excessive. These other orifices are glandular cavities, and so far as we know or can judge, have reference to the season of rutting, and have no connexion whatever with respiration. They exist in greater or less development in all the deer and antelopes, and also in the common sheep, and a peculiar secretion may be seen to exude from it, having also a peculiar odour. Some animals have glandular secretions in other parts of the body—musk, civet, zibet, &c.—known as perfumes, and the peculiar utilities of these glands, except in secreting a strong scent, is unknown."

Professor Bell (vol. i. p. 44 *note*) says: "The view taken by White both of the structure and use of these cavities or glands is entirely erroneous. They have no relation to the function of respiration. See Owen's description of them in the *Proc. Zool. Soc.* for 1836, and Mr. Bennett's observations in his edition of this

of nature worthy our attention; and which has not, that I know of, been noticed by any naturalist. For it looks as if these creatures would not be suffocated, though both their mouths and nostrils were stopped. This curious formation of the head may be of singular service to beasts of chase, by affording them free respiration: and no doubt these additional nostrils are thrown open when they are hard run.[1] Mr. *Ray* observed that at *Malta* the owners slit up the nostrils of such asses as were hard worked: for they, being naturally straight or small, did not admit air sufficient to serve them when they travelled, or laboured, in that hot climate. And we know that grooms and gentlemen of the turf, think large nostrils necessary, and a perfection, in hunters and running horses.

Oppian, the *Greek* poet, by the following line, seems to have had some notion that stags have four spiracula:

"Τετραδυμοι ῥωες, πισυρες πνοιησι διαυλοι."

"Quadrifidæ nares, quadruplices ad respirationem canales."
OPP. CYN. Lib. ii. l. 181.

Writers, copying from one another, make *Aristotle* say that goats breathe at their ears; whereas he asserts just the contrary:—"Αλκμαιων γαρ ουκ αληθη λεγει, φαμενος αναπνειν τας αιγας κατα τα ωτα." "*Alcmæon* does not advance what is true, when he avers that goats breathe through their ears."—History of Animals. Book I. chap. xi.

work, pp. 73, 74." See also interesting notes on the subject in Harting's edition (pp. 51, 52, *notes*).—[R. B. S.]

[1] In answer to this account, Mr. *Pennant* sent me the following curious and pertinent reply. "I was much surprised to find in the *antelope* something analogous to what you mention as so remarkable in deer. This animal also has a long slit beneath each eye, which can be opened and shut at pleasure. On holding an orange to one the creature made as much use of those orifices as of his nostrils, applying them to the fruit, and seeming to smell it through them." —[G. W.]

Weasel.

½ Life size

LETTER XV

TO THE SAME[1]

SELBORNE, *March 30th*, 1768.

DEAR SIR,—[Your account of the Moose gives me a great deal of satisfaction; not only because I am glad to hear that two such animals, so little known, are arrived in this neighbourhood; but because in it you give me hopes that I may have the Honour of y^r^ Company at Selborne; and I earnestly desire that you will not disappoint me of that satisfaction. Tho' the direct way to Goodwood from Town is down the Chichester road, yet if you will come the Alton, and so to Petersfield, there will be but a very few miles' difference; and in y^r^ way to Petersfield you will pass within three miles of my House; and my Horses shall meet you on the turnpike to carry you to this place.]

Some intelligent country people have a notion that we have, in these parts, a species of the *genus mustelinum*, besides the weasel, stoat, ferret, and polecat; a little reddish beast, not much bigger than a field-mouse, but much longer, which they call a *cane*. This piece of intelligence can be little depended on; but farther inquiry may be made.[2]

A gentleman in this neighbourhood had two milk-

[1] This letter, as the MS. in the British Museum shows, formed part of the former one of March 14, 1768, and the author must have divided the two and given a new date to the second half, as the subjects treated of were somewhat different. The invitation to Selborne was omitted in the published work, but is here restored, as being of undoubted interest.—[R. B. S.]

[2] Professor Bell (vol. i. p. 44 *note*) says that one *Cane* or *Kine* is "nothing more than an unusually small female Weasel, the latter being always considerably smaller than the male; and it would appear that in some localities it is even

white rooks in one nest. A booby of a carter, finding them before they were able to fly, threw them down and destroyed them, to the regret of the owner, who would have been glad to have preserved such a curiosity in his rookery. I saw the birds myself nailed against the end of a barn, and was surprised to find that their bills, legs, feet, and claws were milk-white.[1]

A shepherd saw, as he thought, some white larks on a down above my house this winter: were not these the *emberiza nivalis*, the snow-flake of the *Brit. Zool.?* No doubt they were.

A few years ago I saw a cock bullfinch in a cage, which had been caught in the fields after it was come to its full colours. In about a year it began to look dingy; and, blackening every succeeding year, it became coal-black at the end of four. Its chief food was hempseed. Such influence has food on the colour of animals! The pied and mottled colours of domesticated animals are supposed to be owing to high, various, and unusual food.[2]

I had remarked, for years, that the root of the cuckoo-pint (*arum*) was frequently scratched out of the dry banks of hedges, and eaten in severe snowy weather. After observing, with some exactness, myself, and getting others to do the same, we found it was the thrush kind that

smaller than ordinary." He states that he has received it both from Kent and Sussex, and that "it cannot be considered a distinct variety, as it does not differ from the ordinary character in any other respect."—[R. B. S.]

[1] Sir William Jardine observes: "We possess a large rookery, and although we have never had an entire white or cream-coloured variety, scarcely a year passes without some young being observed with more or less white in the plumage, and in these the bill and feet, as well as the claws, are also white."

For some years in succession there was always a nest within a small area of a gigantic lime-avenue at Avington Park, in Hampshire, in which all the young birds had white chins. Some of the specimens are preserved in the British Museum, where there is also a very curious variety of a young Rook, presented by Mr. W. B. Tegetmeier, which has white tips to nearly every feather of the body.—[R. B. S.]

[2] This black Bullfinch occurred at Faringdon, while Gilbert White was Curate of that parish, according to Professor Bell (i. p. 45 *note*). It formed the subject of a letter to his nephew, Samuel Barker.—[R. B. S.]

searched it out. The root of the *arum* is remarkably warm and pungent.

Our flocks of female chaffinches have not yet forsaken us. The blackbirds and thrushes are very much thinned down by that fierce weather in *January*.

In the middle of *February* I discovered, in my tall hedges, a little bird that raised my curiosity: it was of that yellow-green colour that belongs to the *salicaria* kind, and, I think, was soft-billed. It was no *parus;* and was too long and too big for the golden-crowned wren, appearing most like the largest willow wren. It hung sometimes with its back downwards, but never continuing one moment in the same place. I shot at it, but it was so desultory that I missed my aim.[1]

I wonder that the stone-curlew, *charadrius œdicnemus*,[2] should be mentioned by the writers as a rare bird: it abounds in all the campaign parts of *Hampshire* and *Sussex*, and breeds, I think, all the summer, having young ones, I know, very late in the autumn. Already they begin clamouring in the evening. They cannot, I think, with any propriety, be called, as they are by Mr. *Ray*,[3] "*circa aquas versantes;*" for with us, by day at least, they haunt only the most dry, open, upland fields and sheep-walks, far removed from water: what they may do in the night I cannot say. Worms are their usual food, but they also eat toads and frogs.[4]

[1] I agree with Mr. Harting (ed. Selborne, p.54 *note*) that this bird must have been a Chiffchaff (*Phylloscopus minor*), a species which must occasionally winter with us in mild seasons. Mr. Robert Read recently presented to the British Museum a specimen obtained by him near Taunton on the 12th of December 1891.—[R. B. S.]

[2] *Œdicnemus œdicnemus* (Linnæus), called also *Œdicnemus scolopax* (Scop.), and *Œdicnemus crepitans* (Temm.) by modern authors.—[R. B. S.]

[3] During the autumn migration they are sometimes shot on the sea-shore.—[R. B. S.]

[4] Mr. Harting says (ed. p. 55 *note*) that the stomachs of specimens examined by him were filled chiefly with the remains of beetles, but in one the remains of a long-tailed Field-Mouse were found. Some living birds which Dr. Günther and I kept alive in our gardens, were principally fed on raw meat and the bodies of Sparrows. Gilbert White, though duly noting the perfect assimilation of their plumage to their surroundings, does not allude to the curious method

I can show you some good specimens of my *new mice*. *Linnæus* perhaps would call the species *mus minimus*.

[When y^r^ sheets containing a list of the British birds, &c., come out, you will gratify me much by y^r^ sending me one. I am glad to hear you intend to continue y^r^ publications in the natural way. My Relation at Gibraltar[1] had never at all applyed to these kinds of studies, & has no books of that sort: else he might be helpful to you with regard to the Birds of Barbary and Andalucia. Pray give my humble respects to M^r.^ Banks, & tell him I shall not forget him next month with regard to the *Lathræa squammaria*. If he will do me the Honour to come & see me, he will soon find how many curious plants I am acquainted with in my own Country. I request also that you will be pleased to pay my compliments & thanks to M^r.^ Barrington for the agreeable present of his Journal, which I am filling up day by day. Buntings I saw in plenty last week. Requesting that you will continue to honour me with the favour of y^r^ correspondence,

I conclude, Sir,
Y^r^ most obedient servant
GIL: WHITE.]

of concealment which these birds exhibit—viz., of throwing themselves flat on the ground and lying quite still with their necks stretched out, at the approach of the slightest cause of alarm. Even the tiny nestlings perform this trick, and in fallow and stony ground they are perfectly indistinguishable; but it is laughable to see an old bird stretching himself out, and fancying himself concealed, in the middle of a tennis-lawn, as my captive pets used to do, their tawny plumage rendering them conspicuous objects at a distance of twenty yards. So strong is the force of instinct! A Bittern (*Botaurus stellaris*) will stand in front of a green bush in the Zoological Gardens, and make himself thin like a dead bulrush, with his neck stiffened out, and then gradually turn his rush-like neck to the spectators, moving it as the latter walk to one side or the other. In a reed-bed this method of concealment would be effectual, but with a dark green back-ground showing up the light plumage of the bird, the device is of no avail, and yet the instinct of concealment remains unabated.—[R. B. S.]

[1] His brother John, who was chaplain there.—[R. B. S.]

LETTER XVI

TO THE SAME

SELBORNE, *April 18th*, 1768.[1]

DEAR SIR,—[As I had set my mind on the pleasure of y^r^ conversation, so I was in proportion disappointed when I found that you could not come. But as y^r^ business may be over now I shall still live in hopes of seeing you at this beautiful season, when every hedge and field abounds with matter of entertainment for the curious. If you could come down at the end of this week, or the beginning of next, I should be ready to partake with you in a post-chaise back to town on the second of May.]

The history of the stone-curlew, *charadrius œdicnemus*, is as follows.[2] It lays its eggs, usually two, never

[1] Actual date of letter "April 19: 1768."—[R. B. S.]

[2] Thick-Knee is the proper name for this bird. It is not a Curlew (*Numenius*) at all, the latter bird being allied to the Sand-pipers and Snipes, whereas the genus *Œdicnemus* belongs to the Plovers (*Charadriinæ*) and not to the Snipes (*Totaninæ*), two very distinct sub-families of Wading Birds or *Limicolæ*, as they are called. The Thick-Knees are not far removed from the Bustards (*Otides*). In past years I have seen many pairs on Salisbury Plain and an occasional pair on the downs above Avington, in Hampshire, but near Selborne the species is evidently much less plentiful than it was in Gilbert White's day, for Professor Bell writes: "I have occasionally heard its cry late in the evening as it has passed at a considerable height over the village; but in thirty years I have never seen one, alive or dead" (vol. i. p. 47).

Mr. Paxton Parkin tells me that he has occasionally heard the cry of the Thick-Knee at night, but has not seen one since he has lived at the Wakes. Although rarer in most parts of the south of England than it was formerly,

more than three, on the bare ground, without any nest, in the field; so that the countryman, in stirring his fallows, often destroys them. The young run immediately from the egg, like partridges, &c., and are withdrawn to some flinty field by the dam, where they sculk among the stones, which are their best security; for their feathers are so exactly of the colour of our grey spotted flints, that the most exact observer, unless he catches the eye of the young bird, may be eluded. The eggs are short and round; of a dirty white, spotted with dark bloody blotches. Though I might not be able, just when I pleased, to procure you a bird, yet I could show you them almost any day; and any evening you may hear them round the village, for they make a clamour which may be heard a mile. *Œdicnemus* is a most apt and expressive name for them, since their legs seem swoln like those of a gouty man.[1] After harvest I have shot them before the pointers in turnip-fields.[2]

I make no doubt but there are three species of the *willow-wrens*:[3] two I know perfectly; but have not been able yet to procure the third. No two birds can differ more in their notes, and that constantly, than those two that I am acquainted with; for the one has a joyous, easy, laughing note; the other a harsh loud chirp. The former is every way larger, and three-quarters of an inch longer, and weighs two drams and a half; while the latter weighs but two: so the songster is one-fifth heavier than the chirper.

the bird must still occur in the neighbourhood of Selborne, for there is plenty of wild down-land suited to its habits. Lord Walsingham informs me that the species is still found on his property in Norfolk, whence came the well-known family group of these birds in the Natural History Museum, but that it is not so frequent as formerly. It does not stay the winter.—[R. B. S.]

[1] Mr. Harting, who is one of the best authorities on the Wading-birds, says, that this swelling of the upper part of the tarsus is characteristic only of the young birds of the year (ed. Selborne, p. 56, *note*).—[R. B. S.]

[2] See Letter XXIII.—[R. B. S.]

[3] The differences between the Willow Warbler (*Phylloscopus trochilus*) and the Chiffchaff (*Phylloscopus minor*) could scarcely be better described than is here done by Gilbert White, who was then on the track of the third species, viz. the Wood Warbler (*Phylloscopus sibilator*). (See Letter XIX, p. 79.)—[R. B. S.]

"AFTER HARVEST I HAVE SHOT THEM BEFORE THE POINTERS IN TURNIP FIELDS"

The chirper (being the first summer-bird of passage that is heard, the wryneck sometimes excepted) begins his two notes in the middle of *March*, and continues them through the spring and summer till the end of *August*, as appears by my journals. The legs of the larger of these two are flesh-coloured; of the less, black.

The *grasshopper-lark*[1] began his sibilous note in my fields last *Saturday*. Nothing can be more amusing than the whisper of this little bird, which seems to be close by though at an hundred yards distance; and, when close at your ear, is scarce any louder than when a great way off. Had I not been a little acquainted with insects, and known that the grasshopper kind is not yet hatched, I should have hardly believed but that it had been a *locusta* whispering in the bushes. The country people laugh when you tell them that it is the note of a bird. It is a most artful creature, sculking in the thickest part of a bush; and will sing at a yard distance, provided it be concealed. I was obliged to get a person to go on the other side of the hedge where it haunted, and then it would run, creeping like a mouse, before us for an hundred yards together, through the bottom of the thorns; yet it would not come into fair sight: but in a morning early, and when undisturbed, it sings on the top of a twig, gaping and shivering with its wings. Mr. *Ray* himself had no knowledge of this bird, but received his account from Mr. *Johnson*, who apparently confounds it with the *reguli non cristati*, from which it is very distinct. See *Ray's "Philosophical Letters,"* p. 108.[2]

[1] The Grasshopper Warbler (*Locustella nævia*).—[R. B. S.]

[2] As Professor Newton has pointed out in Bell's edition (vol. i. p. 49), Linnæus did not know the 'Grasshopper Lark'; and the name of *Alauda trivialis* applies to the Tree-Pipit. Seebohm (Hist. Brit. Birds, vol. i. p. 340) observes that the specimen sent to Willoughby and Ray by Mr. Johnson of Greta Bridge, in Yorkshire, was certainly, from the description, a Grasshopper Warbler, "but the habits of the bird described resemble most those of the Wood Warbler. Possibly Mr. Johnson confounded the notes of the two species together:" hence White's observation!—[R. B. S.]

A List of the Summer Birds of Passage discovered in this neighbourhood, ranged somewhat in the Order in which they appear:[1]

	Linnæi nomina.
Smallest willow-wren,	*Motacilla trochilus.*
Wryneck,	*Jynx*[2] *torquilla.*
House-swallow,	*Hirundo rustica.*
Martin,	*Hirundo urbica.*
Sand-martin,	*Hirundo riparia.*
Cuckoo,	*Cuculus canorus.*
Nightingale,	*Motacilla luscinia.*
Blackcap,	*Motacilla atricapilla.*
Whitethroat,	*Motacilla sylvia.*
Middle willow-wren,	*Motacilla trochilus.*
Swift,	*Hirundo apus.*
Stone-curlew?	*Charadrius œdicnemus?*
Turtle-dove?	*Turtur aldrovandi?*
Grasshopper-lark,	*Alauda trivialis.*
Landrail,	*Rallus crex.*
Largest willow-wren,	*Motacilla trochilus.*
Redstart,	*Motacilla phœnicurus.*
Goat-sucker, or fern-owl,	*Caprimulgus europæus.*
Fly-catcher,	*Muscicapa grisola.*

The fly-catcher (*stoparola*) has not yet appeared; it usually breeds in my vine. The redstart begins to sing:

[1] The smallest 'Willow Wren' of this list is the Chiffchaff (*Phylloscopus minor*), 'the Middle Willow Wren' is the Willow Warbler (*Phylloscopus trochilus*), the 'Grasshopper Lark' is the Grasshopper Warbler (*Locustella nævia*), and Linnæus' name of *Alauda trivialis* applies not to this species, but to the Tree-Pipit (*Anthus trivialis*), a bird which must certainly occur near Selborne, for it is by no means uncommon in summer at Avington, only a few miles off. The 'Largest Willow Wren' is the Wood Warbler (*Phylloscopus sibilator*). Here Gilbert White distinctly affirms the presence of a third species of Willow Warbler in England. (See *postea*, Letter XIX.)—[R. B. S.]

[2] The spelling of the name *Iynx* is of curious interest. For years the generic name of the Wryneck was published as *Yunx*, and pronounced as such, but in 1883 the British Ornithologists' Union issued a 'List of British Birds,' of which the Editor was my late friend Henry T. Wharton, who took extraordinary pains with the determination of the classical signification of the names employed. He defined the derivation of the genus *Iynx* to be from ἰυγξω (I shout), but it would seem that Gilbert White, good classic as he was, also knew the source whence Linnæus derived his name, and wrote it correctly.—[R. B. S.]

Grasshopper-Warbler.

½ Life size.

its note is short and imperfect, but is continued till about the middle of *June*. The willow-wrens (the smaller sort) are horrid pests in a garden, destroying the peas, cherries, currants, &c.; and are so tame that a gun will not scare them.

My countrymen talk much of a bird that makes a clatter with its bill against a dead bough, or some old pales, calling it a jar-bird. I procured one to be shot in the very fact; it proved to be the *sitta europæa* (*the nut-hatch*). Mr. *Ray* says that the less spotted *woodpecker* does the same. This noise may be heard a furlong or more.[1]

Now is the only time to ascertain the short-winged summer birds; for, when the leaf is out, there is no making any remarks on such a restless tribe; and, when once the young begin to appear, it is all confusion; there is no distinction of genus, species, or sex.

In breeding-time snipes play over the moors, piping and humming: they always hum as they are descending. Is not their hum ventriloquous like that of the turkey? Some suspect it is made by their wings.[2]

[1] The jarring noise produced by the Greater and Lesser Spotted Woodpeckers (*Dendrocopus major* and *D. minor*) is often to be heard in the south of England in the spring, and carries a great distance. It is brought about by the rapid hammering on slender boughs at the top of some hollow poplar or elm, and appears to be a call-note from one bird to another, as it is immediately answered by a second individual from some distant tree. I have often heard the birds do this in the park-land near Cookham, in Berkshire, but I never heard a Nuthatch (*Sitta cæsia*), which is a common enough species in the neighbourhood, signal in the same manner. The hammer-like strokes of the latter bird can be heard a long way off, but they consist of the deliberate tapping and hacking of the bark, not the vibrating 'whirr' which the woodpeckers produce when they signal to each other. The rasping sound made by the prising off of the bark by the vigorous little Nuthatch can also be heard for some distance from the tree where it is at work. The large size of some of the pieces of bark which fall to the ground could scarcely be believed to be the achievement of such a small bird.—[R. B. S.]

[2] Some naturalists have declared that the drumming is produced by the wings, or by the tail-feathers, while others affirm that the effect proceeds from the bird's throat. The balance of contemporary observation is in favour of the former theory. —[R. B. S.]

This morning I saw the golden-crowned wren, whose crown glitters like burnished gold. It often hangs like a titmouse, with its back downwards.

[I look back not without confusion at the length of my letter: and am with great esteem,

Yr obedient servant,
Gil: White.]

LETTER XVII

TO THE SAME

SELBORNE, *June 18th*, 1768.[1]

DEAR SIR,—[Your obliging letter dated May the 4th came to Selborne while I was in London, but was sent up after me. While I was in town I was often in company with y^r^ friend Mr. Barrington; and cannot say enough in commendation of the candor and affability of that gentleman. Even Mr. Banks (notwithstanding he was so soon to leave the kingdom and undertake his immense voyage) afforded me some hours of his conversation at his new house, where I met Dr. Solander.

I am now to return you my warmest thanks for y^r^ agreeable present of the British Zoology, which I accept with great satisfaction as a token of y^r^ friendship: and shall look upon y^r^ work as an ornament to my little shelf of natural history. As far as I have been able to compare any animals with y^r^ descriptions, I find them just and apt; and such as may readily help the reader to ascertain any quadrupede or bird that falls in his way."][2]

On *Wednesday* last arrived your agreeable letter of *June* the 10th. It gives me great satisfaction to find that you

[1] The date of the original letter is June 10, 1768. It is curious that the author should have altered the actual date of so many of his letters in his published work.—[R. B. S.]

[2] The above paragraphs have been crossed out, doubtless by Gilbert White himself, as not necessary for publication. Then follows a sentence so completely obliterated that only a few words are decipherable. I can detect "with the good sense and . . . and particularly that part of it which . . . in the study of nature." The author then proceeds: "Last night arrived y^r^ agreeable letter, &c.," which fits in with the alteration of the date in the published volume.—[R. B. S.]

pursue these studies still with such vigour, and are in such forwardness with regard to reptiles and fishes.

The reptiles, few as they are, I am not acquainted with so well as I could wish, with regard to their natural history. There is a degree of dubiousness and obscurity attending the propagation of this class of animals, something analogous to that of the *cryptogamia* in the sexual system of plants: and the case is the same with regard to some of the fishes; as the eel, &c.

The method in which toads procreate and bring forth seems to be very much in the dark. Some authors say that they are viviparous: and yet *Ray* classes them among his oviparous animals; and is silent with regard to the manner of their bringing forth. Perhaps they may be *ἔσω μὲν ὠοτόκοι, ἔξω δε ζωοτόκοι*, as is known to be the case with the viper.

The copulation of frogs (or at least the appearance of it; for *Swammerdam* proves that the male has no *penis intrans*) is notorious to everybody: because we see them sticking upon each others backs for a month together in the spring: and yet I never saw, or read, of toads being observed in the same situation.[1] It is strange that the matter with regard to the venom of toads has not been yet settled. That they are not noxious to some animals is plain: for ducks, buzzards, owls, stone curlews, and snakes, eat them, to my knowledge, with impunity. And I well remember the time, but was not eye-witness to the fact (though numbers of persons were) when a quack, at this village, ate a toad to make the country-people stare: afterwards he drank oil.[2]

[1] Among Gilbert White's papers Professor Bell found one "in a boy's hand" (doubtless a note dictated to his nephew John) relating to the venom of a toad. He says that a little Terrier-bitch "touched it very gently with her nose . . and instantly the foam came from her mouth, and her face and eyes were strongly convulsed. This continued upon her half-an-hour, &c." (Bell's ed. vol. i. p. 52 *note.*)—[R. B. S.]

[2] Sir William Jardine's edition of White's "Selborne" contains the following interesting note on Letter XVII: "This is a letter upon reptiles, the natural history of which, as well as that of fishes, White had little opportunity of studying. Toads procreate exactly in the same manner as frogs, and both are

I have been informed also, from undoubted authority, that some ladies (ladies you will say of peculiar taste) took a fancy to a toad, which they nourished summer after summer, for many years, till he grew to a monstrous size, with the maggots which turn to flesh flies. The reptile used to come forth every evening from an hole under the garden-

oviparous; the bead-like chains which are often seen in pools in spring, as if they were looped over each other, being the newly-deposited spawn of the former. The venom of toads is discarded as a fable; but there is an excretion from the skin which can be exuded upon irritation, and serves for protection. It causes the excessive secretion of saliva in the mouth of a dog, and evidently gives pain. Mr. Herbert says a pike will seize a toad, but immediately disgorges it, while a frog is swallowed.

"There has always been an aversion or disgust at toads. The older poets clothed him in a garb 'ugly and venomous,' and one of our master-bards has likened the Evil Spirit to him, as a semblance of all that is devilish or disgusting.

> 'Him they found
> Squat *like a toad*, close at the ear of Eve,
> Assaying with all his devilish art to reach
> The organs of her fancy.'

Thus we are taught, and the feeling is handed down from family to family, to loathe a harmless animal. The bite is innocent of any after consequences, and we never saw a toad attempt to bite. The exudation of the skin is only used in self-defence. They are extremely useful in the destruction of insects, and they will be found to be valuable as well as amusing assistants in a greenhouse or conservatory. Sir Joseph Banks wrote: 'I have from my childhood, in conformity with the precepts of a mother void of all imaginary fear, been in the constant habit of taking toads in my hand, holding them there some time, and applying them to my face and nose as it may happen. My motive for doing this very frequently is to inculcate the opinion I have held, since I was told by my mother, that the toad is actually a harmless animal: and to whose manner of life man is certainly under some obligation, as its food is chiefly those insects which devour his crops and annoy him in various ways" (p. 51).

Professor Bell adds the following remarks (ed. "Selborne," p. 50 *note*): "The whole of the typical Batrachia, the frogs, toads, newts, salamanders, &c., undergo a complete metamorphosis. In the land species (of which we have no representative in this country), as from their habits they cannot have constant access to water, the aquatic portion of their existence, during which the gills remain attached, cannot be passed in that medium in the same manner as the frogs, &c. This essential process, therefore, takes place in the oviduct, before they are excluded from the mother and come forth in the perfect condition. But in the other forms, to which our native species all belong, the change takes place in the water, and the young live there for a time in a fish-like state as regards not only their respiration but most of the other functions of life. The common water-newt, or eft, exhibits a beautiful example of this interesting change, retaining its pretty reddish leaf-like gills till the animals are an inch or more in length."—[R. B. S.]

steps; and was taken up, after supper, on the table to
fed. But at last a tame raven, kenning him as he put fo
his head, gave him such a severe stroke with his horny be
as put out one eye. After this accident the creatu
languished for some time and died.

I need not remind a gentleman of your extensive readi
of the excellent account there is from Mr. *Derham*, in *Ra*
"Wisdom of God in the Creation" (p. 365), concerning t
migration of frogs from their breeding ponds. In th
account he at once subverts that foolish opinion of th
dropping from the clouds in rain; showing that it is fro
the grateful coolness and moisture of those showers th
they are tempted to set out on their travels, which th
defer till those fall. Frogs are as yet in their tadpole stat
but, in a few weeks, our lanes, paths, fields, will swarm f
a few days with myriads of those emigrants, no larger th
my little finger nail. *Swammerdam* gives a most accura
account of the method and situation in which the ma
impregnates the spawn of the female. How wonderful
the œconomy of Providence with regard to the limbs of
vile a reptile! While it is an *aquatic* it has a fish-like ta
and no legs: as soon as the legs sprout, the tail drops off
useless, and the animal betakes itself to the land!

Merret, I trust, is widely mistaken when he advanc
that the *rana arborea* is an *English* reptile; it abounds
Germany and *Switzerland*.[1]

It is to be remembered that the *salamandra aquatica*
Ray (the water-newt or eft) will frequently bite at t
angler's bait, and is often caught on his hook. I used
take it for granted that the *salamandra aquatica* w
hatched, lived, and died, in the water. But *John El*
Esq., F.R.S. (the coralline *Ellis*), asserts, in a letter to t

[1] Professor Bell comments on this statement: "There is, of course,
ground for the statement that the *Hyla viridis* is a native of this coun
It is difficult to understand how Gilbert White could entertain a repugnance t
little creature so harmless and beautiful, and so interesting in its habits. As
Hyla lives on trees, and does not frequent the water except for breeding
changes its skin in the same manner as the toad. This I have ascertaine
(Bell's ed., i. p. 53 *note*.)—[R. B. S.]

Royal Society, dated *June* the 5th, 1766, in his account of the *mud inguana*, an amphibious *bipes* from *South Carolina*, that the water-eft, or newt, is only the *larva* of the land-eft, as tadpoles are of frogs. Lest I should be suspected to misunderstand his meaning, I shall give it in his own words. Speaking of the *opercula* or coverings to the gills of the *mud inguana*, he proceeds to say that, "The form of these pennated coverings approach very near to what I have some time ago observed in the *larva* or *aquatic* state of our *English lacerta*, known by the name of eft, or newt; which serve them for coverings to their gills, and for fins to swim with while in this state; and which they lose, as well as the fins of their tails, when they *change* their state and *become land animals*, as I have observed, by keeping them alive for some time myself."

Linnæus, in his *Systema Naturæ*, hints at what Mr. *Ellis* advances more than once.

Providence has been so indulgent to us as to allow of but one venomous reptile of the serpent kind in these kingdoms, and that is the viper. As you propose the good of mankind to be an object of your publications, you will not omit to mention common sallad oil as a sovereign remedy against the bite of the viper. As to the blind worm (*anguis fragilis*, so called because it snaps in sunder with a small blow), I have found, on examination, that it is perfectly innocuous. A neighbouring yeoman (to whom I am indebted for some good hints) killed and opened a female viper about the 27th of *May:* he found her filled with a chain of eleven eggs, about the size of those of a blackbird; but none of them were advanced so far towards a state of maturity as to contain any rudiments of young. Though they are oviparous, yet they are viviparous also, hatching their young within their bellies, and then bringing them forth. Whereas snakes lay chains of eggs every summer in my melon-beds, in spite of all that my people can do to prevent them; which eggs do not hatch till the spring following, as I have often experienced. Several intelligent folks assure me that they have seen the viper

open her mouth, and admit her helpless young down he throat on sudden surprises, just as the female opossu does her brood into the pouch under her belly, upon th like emergencies; and yet the *London* viper-catchers insi on it, to Mr. *Barrington*, that no such thing ever happens

[1] Sir William Jardine's note in his edition of "Selborne" is as follows: "Th question remains, we believe, nearly as it did in White's time. There have be statements upon both sides, and some time since it gave rise to a very long di cussion in the *Gardener's Chronicle*, but which, with the others, ended in nothi that could be taken as *undoubted proof* of the fact. We have always looked up this as a popular delusion, and the supposed habit is so much at variance wi what we know of the general manners and instincts of animals that, without *u doubted proof* of its occurrence, we incline still to consider it as such. Somethi always occurs to prevent the adder that has swallowed her young being capture and the evidence rests on such an one having seen the young enter the mou of the parent. Now, we do not mean to call in question the veracity of t observers reporting what they at the time believed to be the case, but we kn how easy it is to be deceived, and how difficult it is to observe correctly. M Bennett leaves the question open; but in the latest edition of 'Selborne,' Bohn's Illustrated Library, the following note by the editor occurs: 'Havi taken much pains to ascertain the fact of young vipers entering the mouth of th mother, I can now have little doubt but that such is the case, after the eviden of persons who assured me that they had seen it. I also found young vipers the stomach of the mother of a much larger size than they would be when fi ready to be excluded.' We presume that the young vipers in the stomach of t mother were found alive; it is not so stated. Could the Zoological Society n do something to solve this problem? A comparatively trifling expense wou procure a good collection of adders were it known they were wanted, and amo them a female might be found and watched. See also Mr. White's remark Letter XXXI, to Mr. Barrington, where he cut up an adder, and found you in the '*abdomen*,' by which term he evidently means the uterus or ovarium,[1] f he adds, 'there was little room to suppose they were taken in for refuge.' Lett XXXI should be turned to and read with this one to Pennant" (p. 53).

Professor Bell contributed the following observation to Mr. Bennett's editi of "Selborne," and reproduces it in a note to his own edition (p. 54 *note*): ' have been assured by a very honest and worthy gardener in Dorsetshire that had seen the young vipers enter the mouth of the mother when alarmed. I ha never been able to obtain further reliable evidence of the fact, though I ha made the most extensive inquiries in my power. If it be untrue, the popular err may have arisen from the fact of fully-formed young having been found in t abdomen of the mother, ready to be excluded." "Surely," says Bell, "the e periment might be tried, and the question set at rest." Frank Buckland in h edition of "Selborne" ridicules the idea of the young vipers seeking refuge fro danger in the mouth of the mother, and an amusing skit on the subject is pr vided by the late Harry Lee. A few years ago I contributed a weekly article Lloyd's newspaper on natural history. These popular sketches were written

[1] Oviduct.—[W. P. P.]

The serpent kind eat, I believe, but once in a year; or, rather, but only just at one season of the year. Country people talk much of a water-snake, but, I am pretty sure, without any reason; for the common snake (*coluber natrix*) delights much to sport in the water, perhaps with a view to procure frogs and other food.

I cannot well guess how you are to make out your twelve species of reptiles, unless it be by the various species, or rather varieties, of our *lacerti*, of which *Ray* enumerates five. I have not had opportunity of ascertaining these; but remember well to have seen, formerly, several beautiful green *lacerti* on the sunny sand-banks near *Farnham*, in *Surrey;* and *Ray* admits there are such in *Ireland*.[1]

myself or by my friends, Mr. Lydekker, Mr. R. I. Pocock, and other colleagues in the Natural History Museum, and among the best of these articles was one contributed by my friend Mr. Pickard-Cambridge, an excellent field-naturalist, who would have none of the legend of the viper providing in its own body a refuge for its little ones. I received a letter in reply (which, to my great regret, I cannot at the moment lay hands upon) from a correspondent who averred that he had witnessed the fact himself. "Brusher" Mills, the well-known snake-catcher of the New Forest, affirms that the young vipers *do* take refuge in the mouth of the mother (see *Wide World Magazine* for Oct. 1899, p. 153), and in the face of so much independent testimony it seems scarcely possible to doubt that the young are received into the old viper's œsophagus on the approach of danger.—[R. B. S.]

[1] Gilbert White never pretended to have more than a passing knowledge of Reptiles and Fishes, and he laments his want of opportunity. Professor Bell is doubtless right when he credits him with a "strong prejudice" against Reptilia and Amphibia, but many people, even at the present day, are similarly prejudiced. Bell says that this inherent dislike "prevented him from either acquiring a technical knowledge of the different species, or of observing their habits and physiology." Gilbert White was such a thorough field-naturalist that I feel sure that he would have studied the life-history of any animal which came within his power of observation, but he was a horticulturist and an ornithologist first of all, and a very busy man at all times, so that the absence of detailed notes on the habits of Reptilia may actually have arisen from lack of opportunity to study the ways of animals, to which he may also have entertained a natural antipathy.

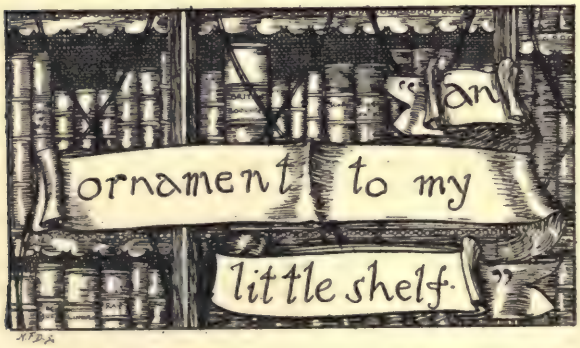
The following note of Professor Bell's is of great interest: "The species which I have myself seen at Selborne are the following:—of Reptilia, the little viviparous lizard, *Zootoca vivipara*, which is common on the sandy heath of Wolmer Forest; the blind-worm, *Anguis fragilis;* the common snake, *Natrix torquata;* the viper, *Pelias berus;* of Amphibia, the common frog, *Rana temporaria;* the common toad, *Bufo vulgaris;* the natter-jack, *Bufo calamita;* the warty newt, *Triton cristatus;* the common smooth newt, *Lissotriton punctatus;* the palmated smooth newt, *Lissotriton palmipes*. It is unnecessary now, and in

[I should now proceed to the answering some queries in y^r^ last, and to congratulating you on the discovery of a new *Salicaria;* but having destined this epistle altogether to the service of reptiles, I shall stick to my text; and defer such matters 'til a further opportunity, ('til the next time I have the honour to write to you).

I am with the greatest esteem,

Y^r's^ &c., &c.]

this work, to enter into any detail of the physiology of these animals; but a few facts respecting one or two of them as occurring at Selborne may not be out of place. Some years ago the natter-jack was by far the most common species of toad in my garden, taking the place of the ordinary species, which was then comparatively rare; but for some years past not one of the former has been seen, and no cause has ever suggested itself for its disappearance. Its voice was far more powerful and resonant than that of any of its congeners, and could be heard at a great distance, resembling almost deceptively that of the night-jar; it was however, only heard during the breeding season. Another remarkable peculiarity was its fondness for hot and dry situations; one in particular took its station under a stone close to a south wall, and was frequently seen peeping out from its hiding-place, and if taken up in the hand would immediately resume its position upon being placed on the ground. I have seen hundreds of young ones not larger than the finger-nail on the heath at Wolmer, not far from the pond, where doubtless they had been bred. The palmated smooth newt formerly inhabited a pond on the common; but I have not seen it for some years."—[R. B. S.]



LETTER XVIII

TO THE SAME

SELBORNE, *July 27th*, 1768.[1]

DEAR SIR,—I received your obliging and communicative letter of *June* the 28th, while I was on a visit at a gentleman's house, where I had neither books to turn to, nor leisure to sit down, to return you an answer to many queries, which I wanted to resolve in the best manner that I am able.

A person, by my order, has searched our brooks, but could find no such fish as the *gasterosteus pungitius:* he found the *gasterosteus aculeatus* in plenty. This morning, in a basket, I packed a little earthen pot full of wet moss, and in it some sticklebacks, male and female; the females big with spawn: some lamperns; some bulls heads; but I could procure no minnows. This basket will be in *Fleet Street* by eight this evening; so I hope *Mazel* will have them fresh and fair to-morrow morning.[2] I gave some directions, in a letter, to what particulars the engraver should be attentive.[3]

Finding, while I was on a visit, that I was within a reasonable distance of *Ambresbury*,[4] I sent a servant over to that town, and procured several living specimens of loaches,

[1] Actual date, July 25, 1768.—[R. B. S.]

[2] In the original letter the passage reads as follows: "As the coach goes every day from Alton to London, I think that fish sent in wet moss by that conveyance will arrive very fresh in town: therefore I intend to procure the fishes of our streams, and will send them up to Mr. Mazel by means of my Brother, who will order him to engrave them as you desire."—[R. B. S.]

[3] Peter Mazell was the engraver of the plates in Pennant's works, and engraved some of the plates for Gilbert White's original edition of "Selborne."—[R. B. S.]

[4] Amesbury.—[R. B. S.]

which he brought, safe and brisk, in a glass decanter. They were taken in the gullies that were cut for watering the meadows. From these fishes (which measured from two to four inches in length) I took the following description "The loach,[1] in its general aspect, has a pellucid appearance: its back is mottled with irregular collections of small black dots, not reaching much below the *linea lateralis*, as are the back and tail fins; a black line runs from each eye down to the nose; its belly is of a silvery white; the upper jaw projects beyond the lower, and is surrounded with six feelers, three on each side; it's pectoral fins are large, it's ventral much smaller; the fin behind it's anus small; it's dorsal-fin large, containing eight spines; it's tail, where it joins to the tail-fin, *remarkably broad*, without any taperness so as to be characteristic of this genus; the tail-fin is broad and square at the end. From the breadth and muscular strength of the tail it appears to be an active nimble fish."

In my visit I was not very far from *Hungerford*, and did not forget to make some inquiries concerning the wonderful method of curing cancers by means of toads. Several intelligent persons, both gentry and clergy, do, I find, give a great deal of credit to what was asserted in the papers: and I myself dined with a clergyman who seemed to be persuaded that what is related is matter of fact; but, when I came to attend to his account, I thought I discerned circumstances which did not a little invalidate the woman's story of the manner in which she came by her skill. She says of herself "that, labouring under a virulent cancer, she went to some church where there was a vast crowd: on going into a pew, she was accosted by a strange clergyman; who after expressing compassion for her situation, told her that if she would make such an application of living toads as is mentioned she would be well." Now is it likely that this unknown gentleman should express so much tenderness for this single sufferer, and not feel any for the many thousands that daily languish under this terrible disorder? Would he not have made use of this invaluable nostrum for his own

[1] *Nemachilus barbatulus*, L.—[G. A. B.]

emolument; or at least, by some means of publication or other, have found a method of making it public for the good of mankind? In short, this woman (as it appears to me) having set up for a cancer-doctress, finds it expedient to amuse the country with this dark and mysterious relation.

The water-eft has not, that I can discern, the least appearance of any gills; for want of which it is continually rising to the surface of the water to take in fresh air. I opened a big-bellied one indeed, and found it full of spawn. Not that this circumstance at all invalidates the assertion that they are *larvæ:* for the *larvæ* of insects are full of eggs, which they exclude the instant they enter their last state. The water-eft is continually climbing over the brims of the vessel, within which we keep it in water, and wandering away: and people every summer see numbers crawling, out of the pools where they are hatched, up the dry banks. There are varieties of them, differing in colour; and some have fins up their tail and back, and some have not.[1]

[I am not certain that the stone curlew, *œdicnemus*, stays with us quite in the dead of winter. I had often seen them late in the autumn and early in spring. It is probable they may depart for a time: for they have been seen in this neighbourhood & in Sussex near Chichester, 30 & 40, nay 100 in a flock towards winter. They are not usually brought to table: but a Gent: told me he dressed one last summer, & it proved a juicy, well-flavoured bird. I have been endeavouring all the summer to procure you some of their eggs, but without success.

First young swallows appeared on July the 4th. Martins (perhaps the new-flown young ones) began to congregate on the top of our may-pole July 23.

My heart & inclinations will be with you when you climb the rocks of Snowdon, & traverse the shores of Anglesea and Caërnarvon, but there are insuperable difficulties between us. That romantic and Alp-like country must afford much of entertainment for a naturalist.

[1] The fins or membranes upon the tail and back are an appendage to the males only, and are developed at the season of their breeding.—[W. J.]

A man brings me word just this minute that a person at Alton has got a couple of eggs of the *œdicnemus*, which he took this summer in a bean-field ; they are large and round, & very much of the shape & colour of those of the *Falco milvus*, the Kite.

I am with the greatest respect &c., &c.]

Chiff Chaff.
Willow Warbler.
Wood Warbler.

NATURE SIZE

LETTER XIX[1]

TO THE SAME

SELBORNE, *August 17th*, 1768.

DEAR SIR,—[I wrote to you about the 25th of July, & hope my letter reached you as it was directed to Sr R: Mostyn as usual. In that letter I gave you an account that

[1] This is one of the most important letters in the book. It is the first clear definition of the three migratory species of Willow-Wrens, or Willow Warblers (as they are variously called), which annually visit Great Britain. Although the three species are perfectly distinct, it requires to be a trained naturalist to estimate their specific characters, and to recognise their notes. On the 20th of May 1899, I first visited Gilbert White's country, in company with Mr. Freemantle and Mr. Herbert Railton, and I undertook to show them the three species of Willow Warblers. The Chiff-chaff was detected by his note among the ivy-covered trees and bushes which adjoin the path leading to the "zigzag"; the Willow Wren sang to us from the bushy trees which fringe the Hanger, close to the Park which belongs to the "Wakes"; and without moving from the spot, the Wood Warbler's song was heard from the beech-trees of the adjacent Hanger, then in the full spring perfection of its new foliage. The latter was Gilbert White's "yellowish bird," the largest of our three British Willow Warblers: it is distinguished by its white breast and abdomen, and brown or flesh coloured legs, and is the *Phylloscopus sibilator* of modern naturalists. The Willow Wren (*P. trachilus*) has also light-coloured legs, is intermediate in size between the other two, and is altogether a yellower bird, while the Chiff-chaff (*P. minor*) is the smallest, and has black legs. The latter bird, one of the earliest of our spring migrants, has a more rounded wing than the other two species. The second primary is intermediate in length between the sixth and ninth. It migrates to the Mediterranean countries and reaches Abyssinia and Somali Land. The Willow Warbler always has the second primary intermediate in length between the fifth and sixth. It has a more extended winter range than the Chiff-chaff or the Wood Warbler, and is found during our cold season throughout Africa, reaching even to the Cape Colony. The winter home of the Wood Warbler is in North-east Africa and West Africa, for it has been met with on the Gold Coast during our winter months. The above-mentioned differences in the proportions of the primaries or flight-feathers are of great service in distinguishing the three species at all seasons of the year, and particularly in the autumn, when the yellow tint of the plumage assumed by old and young

I had sent the fishes of our streams up to Mazel to be engraved. You had in it also a pretty exact description of the Ambresbury loach taken from living specimens procured from thence; my sentiments with regard to the use of toads near Hungerford; and my suspicions with regard to the water-eft.

Now I present you with a paper of remarks from Thomas Barker Esq. of Lyndon-hall in Rutland, a Gent: who marryed one of my Sisters. In it you will find, I think, a curious register, kept by himself for 32 years, relative to the coming and departure of birds of passage. If you find anything in it, or among y^e^ rest of the observations worthy y^r^ notice you are wellcome, he says, to make what use you please of any of them.][1]

I have now, past dispute, made out three distinct species of the willow-wrens (*motacillæ trochili*) which *constantly* and *invariably* use distinct notes. But at the same time I am obliged to confess that I know nothing of your willow-lark.[2] In my letter of *April* the 18th, I had told you peremptorily that I knew your willow-lark, but had not seen it then; but when I came to procure it, it proved, in all respects, a very *motacilla trochilus;* only that it is a size larger than the two other, and the yellow-green of the whole upper part of the body is more vivid, and the belly of a clearer white. I have specimens of the three sorts now lying before me; and can discern that there are three gradations

birds after their autumn moult renders their identification more difficult than in the breeding season.

The Willow Warbler and the Wood Warbler both build a half-domed grass-nest on the ground, and the former bird lines its nest with feathers, while the Wood Warbler lines its nest with horse-hair, and its eggs are unmistakable from the purplish colour of the spots, which are often thickly clustered together at the larger end. The spots on the eggs of the Willow Warbler are smaller and more decidedly rufous in tint. The Chiff-chaff builds its nest a little way off the ground, sometimes at a height of three or four feet, forms it of grass, but uses no moss like the Willow Warbler, although it lines the nest with feathers. The eggs are slightly smaller than those of the other two species, and the spots, either reddish or purple, are more equally distributed over the surface of the egg.—[R. B. S.]

[1] This "curious" (*i.e.* carefully made) register of the migration of birds in Rutlandshire seems no longer to be in existence.—[R. B. S.]

[2] "Brit. Zool.," edit. 1776, octavo, p. 381.—[G. W.]

of sizes, and that the least has black legs, and the other two flesh-coloured ones. The yellowest bird is considerably the largest, and has its quill-feathers and secondary feathers tipped with white, which the others have not. This last haunts only the tops of trees in high beechen woods, and makes a sibilous grasshopper-like noise, now and then, at short intervals, shivering a little with its wings when it sings; and is, I make no doubt now, the *regulus non cristatus* of Ray; which he says, "*cantat voce stridulâ locustæ.*" Yet this great ornithologist never suspected that there were three species.[1]

[The behaviour of the antelope which you saw in town, strongly corroborates my suspicions concerning the deer. I desire you will not fail to procure a buck's head from S^r R: M:[2] & will have it dissected with care. I could have procured one with ease myself 'til this year: but now my neighbour S^r Simeon Stuart has destroyed his stock, & turned his park into sheep-walks.

The first young swallows appeared on July 4^th & y^e first martins began to congregate on y^e bush of the village may-pole on July 23.

To me it is very plain, that the first swallows & martins that congregate, are the birds of the first brood, & that thro' an inability of flying long at a time. For while these first flyers are spending as much time on a may-pole, the battlements of a tower, &c.: the old ones are busily employed in rearing a second brood.

The swifts have never been seen with us since Aug: 5^th & I conclude will come no more this season. I am always

[1] In the original letter follows a repetition of the note on the Thick-knee which occurred in Letter XVIII, and which I have there restored. The two notes are identical, with the exception that the words "nay 100 in a flock" are not repeated, as if the author fancied that his estimate might have been too large. He then continues: "Understanding that a Quaker at Alton had got two of their eggs which he took in a bean-field as they lay in a hollow place on the naked ground, I went over to see them, and found them round and large, and of a yellow-white blotched with red, and not unlike those of the *Falco milvus*. The man was very civil, and says I may have them when I chuse to send: so I shall preserve them for you."—[R. B. S.]

[2] Sir Roger Mostyn.—[R. B. S.]

amazed that this species should constantly depart so many months before their congeners. It is worth our remarking that tho' the swift is at its arrival of a dark sooty colour yet by being for 16 hours together almost constantly in the sun & air, it becomes before its departure much bleached & as it were what the country people call piss-burnt, like an old weather-beaten brown wig: & yet it returns sooty again in the spring. Now if they go into warm regions during our winter, why do they not return sun-burnt, as they went off? It is a matter of curious enquiry to consider when swifts moult. Change their feathers here they certainly do not: & if they have as much occasion for their wings while absent, as while here, they would find no opportunity to spare several feathers at a time. I would not pretend to lay too much stress on these reflections: but certainly can't refrain from observing that they tend rather to make one suspect that they hide rather than migrate . . . at least for *part* of the long time they are absent from us: and perhaps that at that juncture they moult.

Hoping for a long and communicative letter soon,
I conclude, with great esteem,
Yr most obedient servant,
GIL: WHITE.

P.S.—When you have done with Mr. Barker's remarks please to return them.]

LETTER XX

TO THE SAME

SELBORNE: *Octob^r* 8, 1768.

DEAR SIR,—[Your letter of Septem^r 6^th^ gave me a great deal of entertainment & satisfaction: & the more satisfaction because I really began to fear from y^r^ long & unusual silence that you might be prevented from writing by sickness or some accident that might have befallen you in y^r^ Caernarvon tour. But as I much esteem y^r^ friendly correspondence already, I desire you will not make use of any such methods of enhancing the value of it for the future.

. . . . . .

I receive y^r^ kind invitation into Flintshire as a fresh instance of y^r^ friendly disposition towards me: but whether my health, or the want of command of my time will ever permit me to gratify myself with so pleasing a tour & visit, I cannot pretend to say: however I depend much on having it in my power to give you a meeting in town next spring: & it would be matter of high entertainment & instruction to me to be able to accompany you in y^r^ pursuits after natural knowledge.

. . . . . .

As I do not live nearer to any sand-banks than three miles, I am not so conversant with y^e^ sand-martins as with their congeners. However I know in general that they appear as soon as the swallows, and retire much about the same time. As their stay is of such length, there is little reason to doubt but that they breed twice like the swallow, & house-martin: but this I do not advance as from my own knowledge. How strange is it that so feeble

a little bird as the sand-martin with its soft bill & weak claws should be able to terebrate such deep holes in the hard sand-banks? & yet there is no manner of doubt but that these latebræ are of their own boring. Some, I see, are now left not more than an Inch deep; some three or four; & must remain uncompleated 'til some future summer. I remember but one instance of their deviating from this manner of building in banks; & that is at Bishop's Waltham in Hants, where these birds have nested time out of mind in great numbers in the scaffold-holes, & crannies of the walls of the Bishop's old stables, which are now malt-houses. One colony of these martins on the verge of our forest has been dispossessed of their caverns by the house-sparrows, who breed in them, as they often do in the nests of house-martins. M^r. Peter Collinson, I remember, procured several of these holes to be dug-out to the bottom in winter, & found that they were about two feet deep, & serpentine; but contained nothing but old nests. It appears by my Nat: Journal, that sand-martins were seen in plenty on Septem^r 16^th. They always haunt near great lakes, & waters.

I met with a paragraph in the news-papers some weeks ago that gave me some odd sensations, a kind of mixture of pleasure & pain at the same time: it was as follows: "On the sixth day of August Joseph Banks Esq., accompanyed by D^r. Solander, M^r. Green the Astronomer, &c: set-out for Deal in order to embark aboard the *Endeavour*, Captain Cook, bound for the South-seas." When I reflect on the youth & affluence of this enterprizing Gent: I am filled with wonder to see how conspicuously the contempt of dangers, & the love of excelling in his favourite studies stand forth in his character. And yet tho' I admire his resolution, which scorns to stoop to any difficulties; I cannot divest myself of some degree of solicitude for his person. The circumnavigation of the globe is an undertaking that must shock the constitution of a person inured to a sea-faring life from his childhood: & how much more that of a landman? May we not hope that this strong Impulse, which urges for-

Common Sandpiper.

2/3 Life size

ward this distinguished Naturalist to brave the intemperance of every climate; may also lead him to the discovery of something highly beneficial to mankind? If he survives, with what delight shall we peruse his Journals, his Fauna, his Flora? . . . . if he fails by the way, I shall revere his fortitude, & contempt of pleasures, & indulgences: but shall always regret him, tho' my knowledge of his worth was of late date, & my acquaintance with him but slender.]

It is, I find, in *zoology* as it is in *botany:* all nature is so full, that that district produces the greatest variety which is the most examined. Several birds, which are said to belong to the north only, are, it seems, often in the south. I have discovered this summer three species of birds with us, which writers mention as only to be seen in the northern counties. The first that was brought me (on the 14th of *May*) was the sandpiper, *tringa hypoleucus:* it was a cock bird, and haunted the banks of some ponds near the village; and, as it had a companion, doubtless intended to have bred near that water.[1] Besides, the owner has told me

[1] This it would *not* have done, the neighbourhood of Selborne being quite different from the more northern moorland haunts which the Common Sandpiper affects during the breeding-season. In the spring migrations, however, the Sandpiper visits the ponds and lakes of Hampshire on its passage northward, and at Avington Park I have seen several individuals of this species on the great lake in May, but I never saw one in the autumn, when the Sandpiper appears to travel south in family parties along the rivers, or else by the coast-lines. On the banks of the Thames they are seen singly or in pairs in the spring, and are rare; whereas in autumn they are rather common, being met with in little parties on the sandy banks such as those between Cookham and Marlow, according to my own experience. In the mud-flats of the south coast they are generally seen singly, frequenting the ditches between the mud-banks as the tide recedes. There are always plenty of them about, so that they may belong to the same family party.

Professor Bell (ed. "Selborne," vol. i. p. 59 *note*) says that in July 1860 (a somewhat early date for the return journey of the species; the day of the month is unfortunately not given) a Common Sandpiper was shot on the mill-stream and brought to him. He also mentions a Green Sandpiper (*Helodromas ochropus*) as having been shot in August 1858. This specimen is now in the Alton Museum. A Spotted Redshank, changing from summer to winter plumage, was shot at Oakhanger on August 30, 1851. This specimen was also presented to the Alton Museum. Gilbert White also mentions the shooting of a Green Sandpiper in August 1769, as appears in the hitherto unpublished portion of Letter XXV (*postea*, p. 110).—[R. B. S.]

since, that, on recollection, he has seen some of the sam birds round his ponds in former summers.

The next bird that I procured (on the 21st of *May*) wa a male red-backed butcher-bird, *lanius collurio*. My neigh bour, who shot it, says that it might easily have escaped h notice, had not the outcries and chattering of the whit throats and other small birds drawn his attention to th bush where it was; it's craw was filled with the legs an wings of beetles.

The next rare birds (which were procured for me la week) were some ring-ousels, *turdi torquati*.

This week twelve months a gentleman from *London* being with us, was amusing himself with a gun, and foun he told us, on an old yew hedge where there were berri some birds like blackbirds, with rings of white round the necks: a neighbouring farmer also at the same time observe the same; but, as no specimens were procured, little noti was taken. I mentioned this circumstance to you in n letter of *November* the 4th, 1767: (you however paid b small regard to what I said, as I had not seen these bir myself); but last week the aforesaid farmer, seeing a lar flock, twenty or thirty of these birds, shot two cocks an two hens: and says, on recollection, that he remembers have observed these birds again last spring, about *Lady-da* as it were, on their return to the north. Now perhaps the ousels are not the ousels of the north of *England*, b belong to the more northern parts of *Europe*;[2] and m retire before the excessive rigor of the frosts in those part and return to breed in the spring, when the cold abat

[1] In the original letter: "My brother from Fleet Street [Pennant's publish Benjamin White] being with us, was amusing himself with a gun, &c."—[R. B.

[2] The Ring-ousel (*Merula torquata*) is a bird of the fells in summer. nests on the moors in the west and north of England, and in Scotland a Ireland. The birds observed by Gilbert White were not likely to be those wh had nested on the moors of Dorsetshire or Wales, as there is no evidence o west-to-east migration in the Ring-ousel, and the numbers I saw in Heligol in 1876 came from the north and flew due south when they were disturbed. T Ring-ousels doubtless come to visit Selborne in the autumn on their south migration just as they visit Brighton, and at the same season they occur Central Europe and winter in the Mediterranean countries.—[R. B. S.]

If this be the case, here is discovered a new bird of winter passage, concerning whose migrations the writers are silent: but if these birds should prove the ousels of the north of *England*, then here is a migration disclosed within our own kingdom never before remarked. It does not yet appear whether they retire beyond the bounds of our island to the south; but it is most probable that they usually do, or else one cannot suppose that they would have continued so long unnoticed in the southern countries. The ousel is larger than a blackbird, and feeds on haws; but last autumn (when there were no haws) it fed on yew-berries: in the spring it feeds on ivy-berries, which ripen only at that season, in *March* and *April*.[1]

[I am persuaded from the accounts of two or three people that the *Sturnus cinclus* is sometimes seen in these parts,[2] but more frequently round Lewes in Sussex.]

I must not omit to tell you (as you have been so lately on the study of reptiles) that my people, every now and then of late, draw up with a bucket of water from my well, which is sixty-three feet deep, a large black warty lizard with a fin-tail and yellow belly.[3] How they first came down at that depth, and how they were ever to have got out thence without help, is more than I am able to say.

My thanks are due to you for your trouble and care in the examination of a buck's head. As far as your discoveries reach at present, they seem much to corroborate

[1] Jardine gives the following note in his edition: "White's observations upon the ring-ousel, at the time he wrote, were very important, and made with great accuracy. As in other matters, it will be very interesting for Professor Bell to give his attention to their present habits in the vicinity of Selborne, to ascertain if their numbers continue as many, and their appearance as regular. In Scotland the ring-ousel is a regular summer visitant, extending from the English border to Sutherlandshire; in the rocky districts of the latter county it is tolerably frequent. In autumn and before their departure they visit the lower country, and remain a day or a week according to circumstances, feeding at this time upon various berries, and occasionally visiting gardens. The broods are now joined and mixed together, and the young appear in their imperfect mottled dress" (p. 60). Professor Bell does not seem to have published any notes on the Ring-ousels near Selborne in modern days.—[R. B. S.]

[2] The Dipper (*Cinclus aquaticus*).—[R. B. S.]

[3] *Triton palustris*.—[G. A. B.]

my suspicions; and I hope Mr. ——[1] may find reason to give his decision in my favour; and then, I think, we may advance this extraordinary provision of nature as a new instance of the wisdom of God in the creation.

As yet I have not quite done with my history of the *œdicnemus*, or stone-curlew; for I shall desire a gentleman in *Sussex* (near whose house these birds congregate in vast flocks in the autumn) to observe nicely when they leave him, (if they do leave him), and when they return again in the spring: I was with this gentleman lately, and saw several single birds.

[I am with the greatest esteem,
Your obliged, & most obedient servant
GIL: WHITE.

P.S.—Young martins in their nest Septembr 25th. Swallows and Martins still appear Octobr 7th.]

[1] "Hunter," in the original letter.—[R. B. S.]

LETTER XXI

TO THE SAME

SELBORNE: *Nov^r* 28, 1786.

DEAR SIR,—[Your obliging & communicative letter of Octob^r 23^rd^ lies before me; & ought not any longer to remain unanswered. It is a great pleasure to me to find that amidst your various & extensive correspondence, & the daily labours of your work in hand, you still afford time to pay regard to my trifling remarks, & discoveries; which a man cannot avoid stumbling upon now & then, if he lives altogether in the country, & gives any attention at all to the works of Nature. Happy the man! who knows, like you, how to keep himself innocently & usefully employed; especially where his studies tend to the advancement of knowledge, & the benefit of Society. And happy would it be for many more men of fortune if they knew what to do with their time; if they knew how to shun "The pains & penalties of Idleness," how much dissipation, riot, & excess would they escape; not without the complacency of finding themselves growing still better neighbours & better commonwealths-men?

Poor M^r^ Banks! his undertakings are virtu in excess: & I could almost wish he had followed your advice, & sent a proxy. But then he would have foregone the honour & praise due to such a disinterested hazarding of his life; which a very sensible man the other day told me much more merited a peerage than the enterprize undertaken by L^d^ Anson.

I am sorry D^r^ Hunter has given you no better satisfaction with regard to the buck's head; as I was in hopes

the suspicions concerning the extraordinary provision for smelling bestowed on that animal would have been cleared up at once by that Gent: in a matter so much in his own way.]

With regard to the *œdicnemus*, or stone-curlew, I intend to write very soon to my friend near *Chichester*,[1] in whose neighbourhood these birds seem most to abound; and shall urge him to take particular notice when they begin to congregate, and afterwards to watch them most narrowly whether they do not withdraw themselves during the dead of the winter. When I have obtained information with respect to this circumstance, I shall have finished my history of the *stone-curlew;* which I hope will prove to your satisfaction, as it will be, I trust, very near the truth. This gentleman, as he occupies a large farm of his own, and is abroad early and late, will be a very proper spy upon the motions of these birds: and besides, as I have prevailed on him to buy the Naturalist's Journal (with which he is much delighted), I shall expect that he will be very exact in his dates. It is very extraordinary, as you observe, that a bird so common with us should never straggle to you.

And here will be the properest place to mention, while I think of it, an anecdote which the above-mentioned gentleman told me when I was last at his house; which was that, in a warren joining to his outlet, many daws (*corvi monedulæ*) build every year in the rabbit-burrows under ground. The way he and his brothers used to take their nests, while they were boys, was by listening at the mouths of the holes; and, if they heard the young ones cry, they twisted the nest out with a forked stick. Some water-fowls (*viz.* the puffins) breed, I know, in that manner; but I should never have suspected the daws of building in holes on the flat ground.

[1] Professor Bell says that Gilbert White's friend "near Chichester," was Mr John Woods of Chilgrove (about six miles from Chichester, lying under the chalk down called Bow Hill). He adds: "The stone-curlew, I am informed, is still occasionally met with; but its numbers are now but few" (ed. "Selborne," vol. i. p. 61 *note*).—[R. B. S.]

Another very unlikely spot is made use of by daws as a place to breed in, and that is *Stonehenge*. These birds deposit their nests in the interstices between the upright and the impost stones of that amazing work of antiquity: which circumstance alone speaks the prodigious height of the upright stones, that they should be tall enough to secure those nests from the annoyance of shepherd-boys, who are always idling round that place.

[1] One of my neighbours last *Saturday*, *November* the 26th, saw a martin in a sheltered bottom: the sun shone warm, and the bird was hawking briskly after flies. I am now perfectly satisfied that they do not all leave this island in the winter.

You judge very right, I think, in speaking with reserve and caution concerning the cures done by toads: for, let people advance what they will on such subjects, yet there is such a propensity in mankind towards deceiving and being deceived, that one cannot safely relate anything from common report, especially in print, without expressing some degree of doubt and suspicion.

Your approbation, with regard to my new discovery of the migration of the ring-ousel, gives me satisfaction; and I find you concur with me in suspecting that they are foreign birds which visit us. You will be sure, I hope, not to omit to make inquiry whether your ring-ousels leave your rocks in the autumn. What puzzles me most, is the very short stay they make with us; for in about three weeks they are all gone. I shall be very curious to remark whether they will call on us at their return in the spring, as they did last year.

[Let me congratulate you on the correspondence that You have newly settled with your Languedoc Doctors; since you have always expressed an earnest desire of getting correspondents somewhere in the South of Europe. If these men are any thing of good Naturalists, they may be sure to assist you with their informations & observations with regard to migration; & especially that of the soft-

[1] This sentence forms the postscript to the original letter.—[R. B. S.]

billed birds. It is remarkable that You and Gouan shoul be both publishing Ichthyology together.

I have also written to my South country correspondent at Gibraltar,[1] & urged him to take up the study of Natur a little; & to habituate his mind to attend to the migration of birds & fishes; & to the plants, fossils, and insects of tha part of the world. I have also sent him y^r^ British zoölogy that he may see what is going on at home: & my Brother has sent him Ray's *Synopsis avium & piscium*, the *System Naturæ*, Ray's *Synop: animalium quadrup^m^* &c. As t birds, I fear that the concourse & din of a garrison will no prove very inviting to such timid animals: & long o frequent excursions into Andalusia may not be allowed o by the bigotted & narrow-minded Spaniards; nor be con sistent with the strict & rigid discipline of a place at arm surrounded with a constant blockade of jealous enemies However I could earnestly wish to see a well executed Fauna from that part of the world.

It is a matter of no small satisfaction to me to hear tha You are so forward in your work, & that it is to appear i spring.]

I want to be better informed with regard to ichthyology If fortune had settled me near the sea-side, or near som great river, my natural propensity would soon have urge me to have made myself acquainted with their produc tions: but as I have lived mostly in inland parts, and in a upland district, my knowledge of fishes extends little farthe than to those common sorts which our brooks and lake produce.

[With the greatest esteem
I remain, your obedient, and obliged servant,
GIL: WHITE.]

[1] His brother John.—[R. B. S.] [2] His brother Benjamin.—[R. B. S.]

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LETTER XXII

TO THE SAME

SELBORNE, *Jan.* 2, 1769.

DEAR SIR,—[Your kind & agreable letter in answer to mine of Novem^r^ 28^th^ came safe to hand, but without any date. Among the many correspondents that I stand indebted to for their pleasing communications, there are none whose epistles I sit down to answer with more satisfaction than your own.]

As to the peculiarity of jackdaws building with us under the ground in rabbit-burrows, you have, in part, hit upon the reason; for, in reality, there are hardly any towers or steeples in all this country.[1] And perhaps, *Norfolk* excepted, *Hampshire* and *Sussex* are as meanly furnished with churches as almost any counties in the kingdom. We have many livings of two or three hundred pounds a year, whose houses of worship make little better appearance than dovecots. When I first saw *Northamptonshire*, *Cambridgeshire*, and *Huntingdonshire*, and the fens of *Lincolnshire*, I was amazed at the number of spires which presented themselves in every point of view. As an admirer of prospects, I have reason to lament this want in my own country; for such objects are very necessary ingredients in an elegant landscape.

What you mention with respect to reclaimed toads raises my curiosity. An ancient author, though no naturalist, has well remarked that "*Every kind of beasts, and of birds, and*

[1] The nesting of the Jackdaw in rabbit-burrows has been frequently recorded.—[R. B. S.]

of serpents, and things in the sea, is tamed, and hath been tamed, of mankind."[1]

It is a satisfaction to me to find that a green lizard has actually been procured for you in *Devonshire;* because it corroborates my discovery, which I made many years ago, of the same sort, on a sunny sandbank near *Farnham*, in *Surrey*.[2] I am well acquainted with the south hams of *Devonshire;* and can suppose that district, from it's southerly situation, to be a proper habitation for such animals in their best colours.

Since the ring-ousels of your vast mountains do certainly not forsake them against winter,[3] our suspicions that those which visit this neighbourhood about *Michaelmas* are not *English* birds, but driven from the more northern parts of *Europe* by the frosts, are still more reasonable; and it will be worth your pains to endeavour to trace from whence they come, and to inquire why they make so very short a stay.

[In your letter of June 28th 1768 I could but admire with how much frankness you acknowledged several mistakes in your zoology with respect to some birds of the *Grallæ* order. Candor is a very essential part of a Naturalist, and this accomplishment our great countryman M^r. Ray possessed in an eminent degree; & that rendered him so excellent. . . . If a man was never to write on natural knowledge 'til he knew every thing, he would never write at all: & therefore a readiness to acknowledge mistakes on due conviction is the only certain path to perfection.]

In your account of your error with regard to the two species of herons, you incidentally gave me great entertain-

[1] *James*, chap. iii. 7.—[G. W.]

[2] "The green lizard here spoken of," writes Professor Bell, "which was found by Gilbert White and by the Rev. Revett Shepherd near Farnham, was doubtless the *Lacerta stirpium* of Daudin and Jenyns, now known to be a British species. It has been repeatedly found by myself in the Isle of Purbeck and Poole Heath, in Dorsetshire. It is doubtless the true *L. agilis* of Linnæus ('Brit. Reptiles,' p. 17)," (ed. "Selborne," vol. i. p. 64).

[3] This statement of Pennant's is quite erroneous. The Ring-ousel does not pass the winter in Britain.—[R. B. S.]

Nightjar.

1/3 Life size.

ment in your description of the heronry at *Cressi-hall;* which is a curiosity I never could manage to see. Fourscore nests of such a bird on one tree is a rarity which I would ride half as many miles to have a sight of. Pray be sure to tell me in your next whose seat *Cressi-hall* is, and near what town it lies.[1] I have often thought that those vast extents of fens have never been sufficiently explored. If half a dozen gentlemen, furnished with a good strength of water-spaniels, were to beat them over a week, they would certainly find more species.

[I often take up y^r^ zoology for an hour, & entertain myself with comparing your descriptions with those of the authors that have written on the same subject; & am pleased to find that my friend has thro' the whole acquitted himself so much to advantage. Your treatise in particular on migration I admire much, & think that if it is enlarged as more information comes in, it will contribute much to the advancement of natural knowledge. But there is a passage in the article Goatsucker, page 247, which you will pardon me for objecting to, as I always thought it exceptionable: & that is, "This noise being made *only* in its flight, we suppose it to be caused by the resistance to the air against the hollow of its vastly extended mouth & throat for it flies with both open to take its prey." Now as the first line appears to me to be a false fact; the supposition of course falls to the ground, if it should prove so.]

There is no bird, I believe, whose manners I have studied more than that of the *caprimulgus* (the goat-sucker), as it is a wonderful and curious creature: but I have always found that though sometimes it may chatter as it flies, as I know it does, yet in general it utters it's jarring note sitting on a bough; and I have for many an half hour watched it as it sat with it's under mandible quivering, and particularly this summer. It perches usually on a bare twig, with it's head lower than it's tail, in an attitude well expressed by your

[1] Cressi or Cressy Hall is near Spalding, in Lincolnshire. Mr. Harting says that the Heronry has long since been destroyed.—[R. B. S.]

draughtsman in the folio *British Zoology*. This bird is most punctual in beginning it's song exactly at the close of day; so exactly that I have known it strike up more than once or twice just at the report of the *Portsmouth* evening gun, which we can hear when the weather is still. It appears to me past all doubt that it's notes are formed by organic impulse, by the powers of the parts of it's windpipe, formed for sound, just as cats pur.[1] You will credit me, I hope, when I assure you that, as my neighbours were assembled in an hermitage on the side of a steep hill where we drink tea, one of these churn-owls came and settled on the cross of that little straw edifice and began to chatter, and continued his note for many minutes; and we were all struck with wonder to find that the organs of that little animal, when put in motion, gave a sensible vibration to the whole building! This bird also sometimes makes a small squeak, repeated four or five times; and I have observed that to happen when the cock has been pursuing the hen in a toying way through the boughs of a tree.

It would not be at all strange if your bat, which you have procured, should prove a new one, since five species have been found in a neighbouring kingdom. The great sort that I mentioned is certainly a non-descript; I saw but one this summer, and that I had no opportunity of taking.[2]

Your account of the *Indian-grass* was entertaining. I am no angler myself; but inquiring of those that are, what they supposed that part of their tackle to be made of? they replied, "Of the intestines of a silkworm."

[And here I beg once for all that you would please to remember, that tho' I should not just immediately take

[1] Professor Bell reproduces in a footnote (vol. i. p. 65) the original part of White's letter, and adds: "This statement of Pennant's is one of many proofs how imperfect was his own observation of the habits of birds, and how fallacious and inconsistent was his reasoning. Who could imagine that the possibility of the mere 'resistance of the air,' as the bird was flying with its mouth open, could produce a noise similar to that of a spinning-wheel, and loud enough to be heard for more than a mile? This bird is certainly less common in Selborne and its neighbourhood than it was some years ago, and I have neither seen nor heard one for some years past," &c.—[R. B. S.]

[2] See Letters XXVI, XXXVI, and *note* (*postea*, pp. 114 and 152).

notice of any curious matter which you may inform me of, you are not to suppose that I neglect it; for either I may wait for information, or may have somewhat to advance which I may think more necessary at that time.]

Though I must not pretend to great skill in entomology, yet I cannot say that I am ignorant of that kind of knowledge; I may now and then perhaps be able to furnish you with a little information.

The vast rains ceased with us much about the same time as with you, and since we have had delicate weather. Mr. *Barker*,[1] who has measured the rain for more than thirty years, says, in a late letter, that more has fallen this year than in any he ever attended to; though from *July* 1763 to *January* 1764 more fell than in any seven months of this year.

[Desiring that you will be pleased to accept of my sincerest wishes suitable to the season, I remain

Your obliged, & obedient servant

GIL: WHITE.

The nut-hatch just begins to chatter: it chatters flying.]

[1] In original letter, "My brother Barker."—[R. B. S.]

LETTER XXIII

TO THE SAME

SELBORNE : *Feb.* 28, 1769.

DEAR SIR,—[Some avocation or business of one kin
or another has still prevented my paying that attention t
your kind letter of Jan. 22 : which it deserved. As at th
close of that letter you invite me in a most obliging manne
to come & spend some time in Flintshire ; that paragrap
seems to challenge my first attention. You will not,
hope, suspect me of flattery when I assure You that ther
is no man in the kingdom whom I should visit with mor
satisfaction. For as our studies turn the same way, & w
have been so well acquainted by a long & communicativ
correspondence ; I trust we should relish each other'
conversation, & be soon as well acquainted in person a
by letter. Besides your part of the world would not b
without its charms from novelty ; as I am not acquainte
with the N : W : part of this island any farther up tha
Shrewsbury. Your improvements, y^r^ mines, y^r^ fossils, y
botany, your shores, y^r^ birds, would all be matter of th
highest entertainment to me.

But then how am I to get at all these pleasures &
amusements ? I have neither time nor bodily abilitie
adequate to so long a journey. And if I had time I an
subject to such horrible coach-sickness, that I should b
near dead long before I got to Chester. These difficulties
I know, will be matter of great mirth to you, who hav
travelled all over Europe ; but they are formidable to me
As therefore the man cannot come to the mountain ;
hope the mountain (since friendship will effect strang

things) will come to the man: I hope you will have it in your power to meet me in London, & that you will gratify me with an opportunity of waiting on you to Selborne.]

It is not improbable that the *Guernsey* lizard and our green lizards may be specifically the same; all that I know is, that, when some years ago many *Guernsey* lizards were turned loose in *Pembroke* college garden, in the University of *Oxford*, they lived a great while, and seemed to enjoy themselves very well, but never bred. Whether this circumstance will prove anything either way I shall not pretend to say.

I return you thanks for your account of *Cressi-hall;* but recollect, not without regret, that in *June* 1746 I was visiting for a week together at *Spalding*, without ever being told that such a curiosity was just at hand. Pray send me word in your next what sort of tree it is that contains such a quantity of herons' nests; and whether the heronry consists of a whole grove of wood, or only of a few trees.

It gave me satisfaction to find we accorded so well about the *caprimulgus:* all I contended for was to prove that it often chatters sitting as well as flying; and therefore the noise was voluntary, and from organic impulse, and not from the resistance of the air against the hollow of its mouth and throat.

If ever I saw anything like actual migration, it was last *Michaelmas*-day. I was travelling, and out early in the morning: at first there was a vast fog; but, by the time that I was got seven or eight miles from home towards the coast, the sun broke out into a delicate warm day. We were then on a large heath or common, and I could discern, as the mist began to break away, great numbers of swallows (*hirundines rusticæ*) clustering on the stunted shrubs and bushes, as if they had roosted there all night. As soon as the air became clear and pleasant they all were on the wing at once; and, by a placid and easy flight, proceeded on southward towards the sea: after this I did not see any more flocks, only now and then a straggler.

I cannot agree with those persons that assert[1] that the swallow kind disappear some and some gradually, as they come, for the bulk of them seem to withdraw at once; only some stragglers stay behind a long while, and do never, there is the greatest reason to believe, leave this island. Swallows seem to lay themselves up, and to come forth in a warm day, as bats do continually of a warm evening, after they have disappeared for weeks [this moment a bat is flying round my house]. For a very respectable gentleman assured me that, as he was walking with some friends under *Merton-wall* on a remarkably hot noon, either in the last week in *December* or the first week in *January*, he espied three or four swallows huddled together on the moulding of one of the windows of that college. I have frequently remarked that swallows are seen later at *Oxford* than elsewhere: is it owing to the vast massy buildings of that place, to the many waters round it, or to what else?[2]

[Swallows (*hirundines rusticæ*) as far as I can observe, are the only birds that feed their Young flying. At first when they bring out their broods they usually place them in a row on the dead bough of some tree where they feed them sitting. As soon as the young can fly tollerably, the parent-birds, whenever their mouth is well-furnished with flies, give a signal by a certain note; & the dam & the young bird advancing in a rising direction towards each other on the wing, the food is conveyed by a delicate sleight from the mouth of the former to that of the latter. This method of feeding continues for some time: for after the broods are able to fly pretty strongly, yet there are such awkward vacillations in their motions as incapacitate them to provide for themselves.

[1] In the original letter: "I cannot agree with Mr. Barker" (his brother-in-law), whose notes on migration were then in Pennant's hands.—[R. B. S.]

[2] This letter is a reply to some of Mr. Pennant's inquiries, and is remarkable for the very distinct observations made upon the swallows. In a small pamphlet printed at Rotherham in 1815, the author of which we never ascertained, there are some observations made that agree with many of those recorded by Mr. White. These were also made by a clergyman, as it is told in his short preface, "to rescue a beautiful and instructive phenomenon from oblivion, and to render it subservient to the moral improvement of his numerous and highly-respected charge."—[W. J.]

Swallow.

1/2 Life size.

Swallows with us sometimes build in barns against rafters: & so they did in Virgil's time: *Antea quàm tignis nidos suspendit hirundo.* Some times also they build in porches: & therefore the epithet or trivial name, chimney, (chimney-swallow) used by Mr. Ray is not a good one: & would still be more improper in countries where there are no chimnies.

Long before I had the pleasure of your correspondence I began to suspect that Swifts copulate flying. I kept my suspicions to myself, & have observed them narrowly several years; & do not yet find any reason to retract my supposition; and therefore hope you will not be startled at it.

Those that will attend to their motions on fine summer mornings in the height of breeding time, may see that as they sail gently round very high in the air, one shall settle on the back of the other. During this contact they tumble down for many fathoms together head over heels with a loud shriek: at this juncture I suppose the business of generation is carrying on.

There is nothing very strange in the supposition; for we know that many insects engender flying; as do ducks in their own element the water. All that I have to say about swifts farther at present is, that if what I advance is true, these birds eat, drink, collect materials for their nests, & procreate on the wing: in short perform every function in the air except that of incubation & sleeping !]

When I used to rise in a morning last autumn, and see the swallows and martins clustering[1] on the chimneys and

[1] The migration of the Swallows from England can be observed by any one interested in birds. When the instinct of migration becomes enforced, numbers of Swallows may be seen congregating on telegraph-wires or on the bare boughs of trees. They rest for a day or so and are gone the next. Sand-Martins also affect the telegraph-wires in large numbers at the season of migration, and I have also seen them in flocks resting on the warm sands of our southern harbours (such as Pagham was in the old days), before migrating across the Channel. All that I procured were young birds, and I did not see a single adult one. In inland villages I have known our House-Martins to congregate in what Gilbert White would have called "vast" numbers on the slate roofs of houses in the early morning, as the slates were warmed by the sun. They would sit preening their

thatch of the neighbouring cottages, I could not help being touched with a secret delight, mixed with some degree of mortification: with delight, to observe with how much ardour and punctuality those poor little birds obeyed the strong impulse towards migration, or hiding,[1] imprinted on their minds by their great Creator; and with some degree of mortification, when I reflected that, after all our pains and inquiries, we are yet not quite certain to what regions they do migrate;[2] and are still farther embarrassed to find that some do not actually migrate at all.

These reflections made so strong an impression on my imagination, that they became productive of a composition that may perhaps amuse you for a quarter of an hour when next I have the honour of writing to you.

[I am, with the greatest esteem,
Yr obliged & humble servant,
GIL: WHITE.]

feathers and twitter incessantly, while numbers would perch on the gutters and indulge in a bath. I have already spoken of the way in which the Swallows haunt the reed-beds of the Thames and the marsh-lands of the southern coasts in thousands before the autumn flight takes place.—[R. B. S.]

[1] That Gilbert White entertained a qualified belief in the hybernation of Swallows is evident throughout his writings. He certainly maintained an open mind on the subject, not liking entirely to reject some of the evidence brought to his knowledge. As recently as 1896 a very striking instance of the occurrence of two Swallows in Yorkshire in the winter of 1895–96 was recorded by Dr. Frank Penrose in the "Bulletin" of the British Ornithologists' Club (vol. vi. pp. xviii. xix.) The occurrence is vouched for by the Rev. T. Powell, Vicar of Healey—[R. B. S.]

[2] If Gilbert White had lived in the present day, his doubts as to the migration of the British Swallows and their winter homes would have been set at rest. The Common Swallow (*Hirundo rustica*) is found abundantly in tropical Africa during our cold season, and reaches to the Cape Colony, while the House-Martin (*Chelidon urbica*) and the Sand-Martin (*Clivicola riparia*) have been found in the Transvaal and Rhodesia.—[R. B. S.]

LETTER XXIV

TO THE SAME

SELBORNE, *May 29th*, 1769.

DEAR SIR,—[When your agreable but tardy letter of April 22nd arrived at this place, I was in London: but it was sent up after me. It gave me concern to hear you had been a good while indisposed; & satisfaction to find that you are recovered.

The great honours that have befallen you at Drontheim call for my congratulations. You must heartily believe now in the accounts given by Pontopidon of the kraken, & sea-snake: if you should express any disrespect towards these two remarkable animals, I don't know but they may remove you from ye society as an unworthy brother.]

The *scarabæus fullo* I know very well, having seen it in collections; but have never been able to discover one wild in its natural state. Mr. Banks told me he thought it might be found on the sea-coast.[1]

On the thirteenth of *April* I went to the sheep-down, where the *ring-ousels* have been observed to make their appearance at spring and fall, in their way perhaps to the north or south; and was much pleased to see these birds about the usual spot. We shot a cock and a hen; they were plump and in high condition. The hen had but very small rudiments of eggs within her, which proves they are late breeders; whereas those species of the thrush kind that remain with us the whole year have fledged young before that time. In their crops was nothing very dis-

[1] This handsome Cockchafer (*Melontha*, or *Polyphylla*, *fullo*) is not a British species, but a few have been captured on the coast of Kent—evidently stragglers from the Continent.—[R. I. P.]

tinguishable, but somewhat that seemed like blades of vegetables nearly digested. In autumn they feed on haws and yew-berries, and in the spring on ivy-berries. I dressed one of these birds, and found it juicy and well-flavoured. It is remarkable that they make but a few days stay in their spring visit, but rest near a fortnight at *Michaelmas*. These birds, from the observations of three springs and two autumns, are most punctual in their return; and exhibit a new migration unnoticed by the writers, who supposed they never were to be seen in any southern countries.

One of my neighbours lately brought me a new *salicaria*, which at first I suspected might have proved your willow-lark,[1] but, on a nicer examination, it answered much better to the description of that species which you shot at *Revesby*,[2] in *Lincolnshire*. My bird I describe thus: "It is a size less than the grasshopper-lark; the head, back, and coverts of the wings, of a dusky brown, without those dark spots of the grasshopper-lark; over each eye is a milk-white stroke; the chin and throat are white, and the under parts of a yellowish white; the rump is tawny, and the feathers of the tail sharp-pointed; the bill is dusky and sharp, and the legs are dusky; the hinder claw long and crooked." The person that shot it says that it sung so like a reed-sparrow that he took it for one; and that it sings all night: but this account merits farther inquiry. For my part, I suspect it is a second sort of *locustella*, hinted at by Dr. *Derham* in *Ray's Letters:* see p. 108. He also procured me a grasshopper-lark.

The question that you put with regard to those genera of animals that are peculiar to *America*, viz., how they came there, and whence? is too puzzling for me to answer; and yet so obvious as often to have struck me with wonder. If one looks into the writers on that subject little satisfaction is to be found. Ingenious men will readily advance plausible arguments to support whatever theory they shall

[1] For this *salicaria* see letter *August* 30, 1769.—[G. W.]

[2] This was Sir Joseph Banks's place, where apparently Pennant had been staying.—[R. B. S.]

Sedge-Warbler.

½ Life size

chuse to maintain; but then the misfortune is, every one's hypothesis is each as good as another's, since they are all founded on conjecture. The late writers of this sort, in whom may be seen all the arguments of those that have gone before, as I remember, stock *America* from the western coast of *Africa* and the south of *Europe;* and then break down the Isthmus that bridged over the *Atlantic.* But this is making use of a violent piece of machinery: it is a difficulty worthy of the interposition of a god! "*Incredulus odi.*"

[I return you thanks for y^r late letter of May 9^th^: which I shall endeavour to answer hereafter. In the meanwhile hoping for the pleasure of hearing from you,

I remain,

Please to return Mr. Barker's paper.

Y^r obedient servant,
GIL: WHITE.]

To THOMAS PENNANT, ESQUIRE

THE NATURALIST's SUMMER-EVENING WALK

———equidem credo, quia sit divinitus illis
Ingenium. VIRG. Georg.

WHEN day declining sheds a milder gleam,
What time the may-fly [1] haunts the pool or stream;
When the still owl skims round the grassy mead,
What time the timorous hare limps forth to feed;
Then be the time to steal adown the vale,
And listen to the vagrant [2] cuckoo's tale;
To hear the clamorous [3] curlew call his mate,
Or the soft quail his tender pain relate;
To see the swallow sweep the dark'ning plain
Belated, to support her infant train;

[1] The angler's may-fly, the *ephemera vulgata* LINN. comes forth from it's aurelia state, and emerges out of the water about six in the evening, and dies about eleven at night, determining the date of it's fly state in about five or six hours. They usually begin to appear about the 4th of June, and continue in succession for near a fortnight. See *Swammerdam, Derham, Scopoli,* &c.—[G. W.]

[2] Vagrant cuckoo; so called because, being tied down by no incubation or attendance about the nutrition of it's young, it wanders without control.—[G. W.]

[3] *Charadrius œdicnemus.*—[G. W.] = *Œdicnemus œdicnemus* (Linn.).—[R. B. S.]

To mark the swift in rapid giddy ring
Dash round the steeple, unsubdued of wing :
Amusive birds !—say where your hid retreat
When the frost rages and the tempests beat ;
Whence your return, by such nice instinct led,
When spring, soft season, lifts her bloomy head ?
Such baffled searches mock man's prying pride,
The GOD of NATURE is your secret guide !
While deep'ning shades obscure the face of day,
To yonder bench leaf-shelter'd let us stray,
'Till blended objects fail the swimming sight,
And all the fading landscape sinks in night ;
To hear the drowsy dor come brushing by
With buzzing wing, or the shrill [1] cricket cry ;
To see the feeding bat glance through the wood ;
To catch the distant falling of the flood ;
While o'er the cliff th' awaken'd churn-owl hung
Through the still gloom protracts his chattering song ;
While high in air, and poised upon his wings,
Unseen, the soft enamour'd [2] woodlark sings :
These, NATURE'S works, the curious mind employ,
Inspire a soothing melancholy joy :
As fancy warms, a pleasing kind of pain
Steals o'er the cheek, and thrills the creeping vein !
Each rural sight, each sound, each smell, combine ;
The twinkling sheep-bell, or the breath of kine ;
The new-mown hay that scents the swelling breeze,
Or cottage-chimney smoking through the trees.
The chilling night-dews fall :—away, retire !
For see, the glow-worm lights her amorous fire ! [3]
Thus, ere night's veil had half obscured the sky,
Th' impatient damsel hung her lamp on high :
True to the signal, by love's meteor led,
Leander hasten'd to his Hero's bed.[4]

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[1] *Gryllus campestris.*—[G. W.]

[2] In hot summer nights woodlarks soar to a prodigious height, and hang singing in the air.—[G. W.]

[3] The light of the female glow-worm (as she often crawls up the stalk of a grass to make herself more conspicuous) is a signal to the male, which is a slender dusky *scarabæus.*—[G. W.]

[4] See the story of Hero and Leander.—[G. W.]

LETTER XXV

TO THE SAME

SELBORNE, *Aug.* 30*th*, 1769.[1]

DEAR SIR,—[I am to acknowledge my tardiness in answering your kind letter of June 9th and have to plead, business, workmen, & company: & yet I ought not to have been silent for so many weeks. In a former letter of May the 9th you mention a thought of a periodical publication, that shall receive the various pieces of natural history that otherwise might perish. Not being conversant in such undertakings I am little of a judge whether such a pamphlet would be likely to take: & am fearful that the very occasion of your magazine may be the cause of its not suceeding: for amidst the din & clamour of party Rage, the still small voice of Philosophy will, I fear, be little attended to. However, if you think such a publication expedient, you will no doubt get considerable assistance from your friends; & I shall be ready to advance my mite: but then I shall expect you to be very charitable in your allowance, & to grant that my mite in one respect is equal to larger contributions, as it is all my stock of knowledge.]

It gives me satisfaction to find that my account of the *ousel migration* pleases you. You put a very shrewd question when you ask me how I know that their autumnal migration is southward? Was not candour and openness the very life of natural history, I should pass over this query just as a sly commentator does over a crabbed passage in a classic; but common ingenuousness obliges

[1] Actual date of letter—September 1st, 1769.—[R. B. S.]

me to confess, not without some degree of shame, that I only reasoned in that case from analogy. For as all other autumnal birds migrate from the northward to us, to partake of our milder winters, and return to the northward again when the rigorous cold abates, so I concluded that the ring-ousels did the same, as well as their congeners the fieldfares; and especially as ring-ousels are known to haunt cold mountainous countries: but I have good reason to suspect since that they may come to us from the westward; because I hear, from very good authority, that they breed on *Dartmore;* and that they forsake that wild district about the time that our visitors appear, and do not return till late in the spring.[1]

I have taken a great deal of pains about your *salicaria* and mine, with a white stroke over it's eye and a tawny rump.[2] I have surveyed it alive and dead, and have procured several specimens; and am perfectly persuaded myself (and trust you will soon be convinced of the same) that it is no more nor less than the *passer arundinaceus minor* of *Ray*. This bird, by some means or other, seems to be entirely omitted in the *British Zoology;* and one reason probably was because it is so strangely classed in *Ray*, who ranges it among his *picis affines*. It ought no doubt to have gone among his *aviculæ caudâ unicolore*, and among your slender-billed small birds of the same division. *Linnæus* might with great propriety have put it into his genus of *motacilla;* and *motacilla salicaria* of his *fauna suecica* seems to come the nearest to it. It is no uncommon bird, haunting the sides of ponds and rivers where there is covert, and the reeds and sedges of moors. The country

[1] The Ring-ousel is a north-to-south migrant in autumn, and *vice versâ* in spring. I have seen no trace of a west-to-east migration in the autumn on our southern coasts, and the influx of the species has always seemed to me to be from the northward. So it was in Heligoland in 1876, and there were no arrivals from the east, as was the case with the Hooded Crow (*Corone cornix*), Great Grey Shrike (*Lanius excubitor*), and other species.—[R. B. S.]

[2] The Sedge Warbler (*Acrocephalus phragmitis*), a widely-distributed species in Britain during the summer, migrating in autumn to Africa, where it extends even to the southernmost parts of that continent.—[R. B. S.]

people in some places call it the *sedge-bird.* It sings incessantly night and day during the breeding-time, imitating the note of a sparrow, a swallow, a sky-lark; and has a strange hurrying manner in its song. My specimens correspond most minutely to the description of your *fen salicaria* shot near Revesby. Mr. *Ray* has given an excellent characteristic of it when he says, "*Rostrum et pedes in hâc aviculâ multò majores sunt quâm pro corporis ratione.*" See letter, *May* 29, 1769. (Preceding letter, XXIV.)

I have got you the egg of an *œdicnemus,* or stone-curlew, which was picked up in a fallow on the naked ground: there were two, but the finder inadvertently crushed one with his foot before he saw them.

[My Brother sent me your book of fishes, which proves very entertaining & edifying: & I wish that I was better acquainted with the subject: but having never lived near great waters, or the sea, my opportunities of prying into that branch of Nature have been few.]

When I wrote to you last year on reptiles, I wish I had not forgot to mention the faculty that snakes have of stinking *se defendendo.* I knew a gentleman who kept a tame snake, which was in its person as sweet as any animal while in good humour and unalarmed; but as soon as a stranger, or a dog or cat, came in, it fell to hissing, and filled the room with such nauseous effluvia as rendered it hardly supportable. Thus the squnck, or stonck, of *Ray's Synop. Quadr.* is an innocuous and sweet animal; but, when pressed hard by dogs and men, it can eject such a most pestilent and fetid smell and excrement, that nothing can be more horrible.

[When an opportunity offers I shall be glad to look into y^r^ Indian Zoology. Mr. Skinner of C: C: C: & Mr. Sheffield of Worcester Coll: have lately been with me for a fortnight: & are the only Naturalists that I have ever yet had the pleasure of seeing at my house. They are both excellent Botanists: & the latter makes a very rapid Progress in Entomology. There was great satisfaction in walking out with these men: because no bird,

plant or insect came before them unascertain'd. One day we shot a *Tringa ochrophus*, which is a very rare bird in these parts.[1] Mr. Sheffield tells me you have an elegant place at Downing; large and noble oaks before your house, & beautiful rills and falls of water among them tumbling from slope to slope into the sea.

At the time that you were to be on your journey, I took notice that we had most beautiful weather here in the south: I hope the same season attended you in the most northerly parts of this kingdom; & that you are returned safe from Scotland, full fraught with curiosities & a fresh fund of natural knowledge.]

A gentleman sent me lately a fine specimen of the *lanius minor cinerascens cum maculâ in scapulis albâ Raii*;[2] which is a bird that, at the time of your publishing your two first volumes of *British Zoology*, I find you had not seen. You have described it well from *Edwards's* drawing.

[There appears a Comet nightly (having a tail of about six degrees in length) in the constellation of Aries, between the 24: 29: & 51 stars of that constellation in the English catalogue.

Having been lately very much hurryed by a good deal of correspondence, & a good deal of other writing I was glad to make use of an Amanuensis.

I am with the greatest esteem
Your most obedient & obliged servant,
GIL: WHITE.]

[1] See note, *antea*, p. 85.—[R. B. S.]

[2] The Wood-Chat Shrike (*Lanius pomeranus*) is an occasional visitor to Great Britain, and has even been said to nest in the Isle of Wight. It is distributed over the greater part of Europe in summer, and winters in North-east Africa and Senegambia.—[R. B. S.]

LETTER XXVI

TO THE SAME

SELBORNE, *December 8th*, 1769.

DEAR SIR,—I was much gratified by your communicative letter on your return from *Scotland*, where you spent, I find, some considerable time, and gave yourself good room to examine the natural curiosities of that extensive kingdom, both those of the islands, as well as those of the highlands. The usual bane of such expeditions is hurry; because men seldom allot themselves half the time they should do: but, fixing on a day for their return, post from place to place, rather as if they were on a journey that required dispatch, than as philosophers investigating the works of nature. You must have made, no doubt, many discoveries, and laid up a good fund of materials for a future edition of the *British Zoology;* and will have no reason to repent that you have bestowed so much pains on a part of *Great-Britain* that perhaps was never so well examined before.

[Pray when does Dr. Walker propose to publish his Natural History of the Hebrides?]

It has always been matter of wonder to me that fieldfares, which are so congenerous to thrushes and blackbirds, should never chuse to breed in *England;* but that they should not think even the highlands cold and northerly, and sequestered enough, is a circumstance still more strange and wonderful.[1] The ring-ousel, you find, stays in *Scotland*

[1] The Fieldfare (*Turdus pilaris*) has never been known to breed in Great Britain, though it could be readily believed that it might do so. At present there is no proof that it has nested, and my own experience has been that

the whole year round; so that we have reasons to conclude that those migrators that visit us for a short space every autumn do not come from thence.[1]

And here, I think, will be the proper place to mention that those birds were most punctual again in their migration this autumn, appearing, as before, about the 30th of *September:* but their flocks were larger than common, and their stay protracted somewhat beyond the usual time. If they came to spend the whole winter with us, as some of their congeners do, and then left us, as they do, in spring, I should not be so much struck with the occurrence, since it would be similar to that of the other winter birds of passage; but when I see them for a fortnight at *Michaelmas*, and again for about a week in the middle of *April*, I am seized with wonder, and long to be informed whence these travellers come, and whither they go, since they seem to use our hills merely as an inn or baiting place.

Your account of the greater brambling, or snow-fleck, is very amusing; and strange it is that such a short-winged bird should delight in such perilous voyages over the northern ocean! Some country people in the winter-time have every now and then told me that they have seen two or three white larks on our downs; but, on considering the matter, I begin to suspect that these are some stragglers of the birds we are talking of, which sometimes perhaps may rove so far to the southward.

It pleases me to find that white hares are so frequent on the *Scottish* mountains, and especially as you inform me that it is a distinct species; for the quadrupeds of *Britain* are so few, that every new species is a great acquisition.[2]

specimens of "Fieldfares," from Scotland, when sent to the British Museum with their nests and eggs, have invariably proved to be Mistle Thrushes (*Turdus viscivorus*).—[R. B. S.]

[1] The Ring-ousel does *not* "remain in Scotland the whole year round," and Pennant was mistaken.—[R. B. S.]

[2] Professor Bell gives the following note on the above sentence: "The identity of the Scottish or mountain hare with the *Lepus variabilis* of Pallas has long been known. It is found in the greater part of Scotland, especially in the mountainous districts, and in the whole of Ireland. In the former, the fur changes colour on the approach of winter, becoming gradually white, excepting

Snow-Bunting.

½ Life size.

The eagle-owl, could it be proved to belong to us, is so majestic a bird, that it would grace our *fauna* much. I never was informed before where wild-geese are known to breed.

You admit, I find, that I have proved your *fen-salicaria* to be the lesser reed-sparrow of *Ray:* and I think you may be secure that I am right; for I took very particular pains to clear up that matter, and had some fair specimens; but, as they were not well preserved, they are decayed already. You will, no doubt, insert it in its proper place in your next edition. Your additional plates will much improve your work.

De Buffon, I know, has described the water shrew-mouse:[1] but still I am pleased to find you have discovered it in *Lincolnshire*, for the reason I have given in the article of the white hare.

As a neighbour was lately ploughing in a dry chalky field, far removed from any water, he turned out a water-rat, that was curiously lain up in an *hybernaculum* artificially formed of grass and leaves. At one end of the *burrow* lay above a gallon of potatoes regularly stowed, on which it was to have supported itself for the winter. But the difficulty with me is how this *amphibius mus* came to fix it's winter station at such a distance from the water. Was it determined in it's choice of that place by the mere accident of finding the potatoes which were planted there; or is it

the tips of the ears, which are permanently black. On the return of spring the white fur comes off, and is replaced by its grey summer coat. As it seldom, if ever, changes its colour in Ireland, it was supposed that the Irish Hare was a distinct species; and it was described as such by Mr. Yarrell, with the name of *Lepus hibernicus*. There is, however, no structural difference to warrant such a distinction, and the persistence of its ordinary colour throughout the winter must doubtless be attributed to the milder climate of Ireland.—(Bell, ed. "Selborne," vol. i. p. 76 *note*.)—[R. B. S.]

[1] The following interesting footnote occurs in Professor Bell's edition of "Selborne" (vol. i. p. 76 *note*): "Some years since I observed the water-shrew (*Crossopus fodiens*) in the stream which passes in front of the Grange Farm in Selborne. It was hunting at the bottom of the water among the aquatic plants for insects, and was so flattened that the white of the belly was conspicuous as a narrow margin on each side of the black back, forming a striking and pretty object. I found also in my garden a specimen, recently killed, of the black-bellied variety, formerly known as *Sorex remifer*. It was far from any water. . . ."—[R. B. S.]

the constant practice of the aquatic-rat to forsake the neighbourhood of the water in the colder months?

Though I delight very little in analogous reasoning, knowing how fallacious it is with respect to natural history; yet, in the following instance, I cannot help being inclined to think it may conduce towards the explanation of a difficulty that I have mentioned before, with respect to the invariable early retreat of the *hirundo apus*, or swift, so many weeks before it's congeners; and that not only with us, but also in *Andalusia*, where they also begin to retire about the beginning of *August*.

The great large bat[1] (which by the by is at present a non-descript in *England*,[2] and what I have never been able yet to procure) retires or migrates very early in the summer: it also ranges very high for its food, feeding in a different region of the air; and that is the reason I never could procure one. Now this is exactly the case with the swifts; for they take their food in a more exalted region than the other species, and are very seldom seen hawking for flies near the ground, or over the surface of the water. From hence I would conclude that these *hirundines*, and the larger bats are supported by some sorts of high-flying gnats, scarabs, or *phalænæ*, that are of short continuance; and that the short stay of these strangers is regulated by the defect of their food.

[It is grievous to see from Dr. Solander's letter in the Gent: Mag: dated from Rio de Janeiro with what insolence the viceroy of Brazil treated those Gent: that have hazarded their lives in pursuit of natural knowledge: & this is not the worst of it: for when they arrive in the South Seas their reception will be just the same from every Spanish Governor from Chile to Mexico.]

By my journal it appears that curlews[3] clamoured on

[1] The little bat appears almost every month in the year; but I have never seen the large ones till the end of April, nor after July. They are most common in June, but never in any plenty: are a rare species with us.—[G. W.] This forms the postscript to the original letter.—[R. B. S.]

[2] See also Letters XXII and XXXVI (pp. 96 and 152).—[R. B. S.]

[3] The Stone-Curlew or Thick-Knee, *Œdicnemus œdicnemus*.—[R. B. S.]

to *October* the thirty-first; since which I have not seen or heard any. Swallows were observed on to *November* the third.

[In your last letter you propose to treat zoology geographically; & desire some arguments to support such a new plan: but as I do not quite take the purport of yr Idea on that occasion, I must desire in yr next favour some explanation of yr intention.

I am with the greatest regard and esteem,
Your Humble Servant,
GIL: WHITE.]

LETTER XXVII

TO THE SAME

SELBORNE, *Feb.* 22, 1770.

DEAR SIR,—[In the first place I am to acknowledge your favour of Decem^{r} 23 : which I had no proper leisure nor opportunity of answering before the time at which you proposed to leave Flintshire. I am also to express my thanks for your friendly letter of last week from London, in which you press me to give you a meeting in town. If nothing was wanting but inclination I should with pleasure have set out before now : but this is not a convenient season for me to be from home ; & I am now become a very bad traveller : however I will endeavour to give you a meeting if possible.

As to the manner how swifts procure materials for their nests I am much at a loss : indeed I rather suspect, & with good reason, that they do not (themselves) procure any at all. For after much & careful observation at the time of breeding I never could see one swift carrying in any thing necessary for building. But as the house-sparrow & swift use exactly the same materials, that is to say, grasses from an hay-rick, & hen's feathers ; I am ready to suspect that the latter take up with the old nests of the former, & perhaps sometimes take away their new nests : for I often see swifts at their first coming squabbling with sparrows at the eaves of the church ; & the cock-sparrows up in arms, & much disturbed at the intrusion of these migrants. Now the swallow & martin, which are known to procure their own materials, are seen building every day : but how the swift should convey long grasses, & large feathers from

year to year without being ever discovered so to do by the curious observer, is to me very strange.]

Hedge-hogs abound in my gardens and fields. The manner in which they eat their roots of the plantain in my grass-walks is very curious; with their upper mandible, which is much longer than their lower, they bore under the plant, and so eat the root off upwards, leaving the tuft of leaves untouched. In this respect they are serviceable, as they destroy a very troublesome weed; but they deface the walks in some measure by digging little round holes. It appears, by the dung that they drop upon the turf, that beetles are no inconsiderable part of their food. In *June* last I procured a litter of four or five young hedge-hogs, which appeared to be about five or six days old: they, I find, like puppies, are born blind, and could not see when they came to my hands. No doubt their spines are soft and flexible at the time of their birth, or else the poor dam would have but a bad time of it in the critical moment of parturition: but it is plain they soon harden; for these little pigs had such stiff prickles on their backs and sides as would easily have fetched blood, had they not been handled with caution. Their spines are quite white at this age; and they have little hanging ears, which I do not remember to be discernible in the old ones. They can, in part, at this age draw their skin down over their faces; but are not able to contract themselves into a ball, as they do, for the sake of defence, when full grown. The reason, I suppose, is, because the curious muscle that enables the creature to roll itself up in a ball was not then arrived at it's full tone and firmness. Hedge-hogs make a deep and warm *hybernaculum* with leaves and moss, in which they conceal themselves for the winter: but I never could find that they stored in any winter provision, as some quadrupeds certainly do.[1]

[1] "There is one use of the hedgehog's armour," writes Professor Bell, "which I have never seen mentioned, but which I had repeated opportunities of verifying in one which I kept myself. Running about a small yard at the back of the house, which overhung an area, it would go to the very edge; and after looking over as if to ascertain if the descent were safe, it would roll up into a ball in the

I have discovered an anecdote with respect to the field-fare (*turdus pilaris*), which I think is particular enough; this bird, though it sits on trees in the daytime, and procures the greatest part of its food from white-thorn hedges; yea, moreover, builds on very high trees, as may be seen by the *fauna suecica;* yet always appears with us to roost on the ground. They are seen to come in flocks just before it is dark, and to settle and nestle among the heath on our forest. And besides, the larkers, in dragging their nets by night frequently catch them in the wheat stubbles; while the bat-fowlers, who take many red-wings in the hedges, never entangle any of this species. Why these birds, in the matter of roosting, should differ from all their congeners, and from themselves also with respect to their proceedings by day, is a fact for which I am by no means able to account.

[You are, I understand, embarked in the great & extensive work of an universal zoology. It will be very seldom, I fear, that I shall be able to send you any assistance.]

I have somewhat to inform you of concerning the *moose-deer;* but in general foreign animals fall seldom in my way; my little intelligence is confined to the narrow sphere of my own observations at home.

[As a naturalist I may say—

. . . . ego apis matinæ
More modoque
Grata carpentis thyma per laborem
Plurimum, circa nemus uvidique
Tiburis ripas, operosa parvus
. . . . fingo.

With my respects to Mr. Barrington, & thanks for his two letters, I conclude—

Your obliged, &
Humble servant
GIL: WHITE.]

very act of throwing itself down; and, falling upon its elastic spines, it would in a few seconds after alighting upon the stones, open and run off, wholly unhurt by this voluntary fall of at least ten feet" (ed. "Selborne," vol. i. p. 79 *note*).—[R. B. S.]

LETTER XXVIII

TO THE SAME

SELBORNE, *March*, 1770.[1]

DEAR SIR,—[A journey of business, which detained me longer from home than I expected, must be my excuse for neglecting to answer your letter 'til this time.

My thanks are due for your obliging present of your last publication, which will conduce much to illustrate, & improve the British zoology: the designs are just & the attitudes easy & natural: & the plates so well engraved, that they will convey a much more adequate Idea of an unknown animal to a young naturalist than words possibly can.

Tho' you are embarked in a more extensive plan of natural history, yet I am glad to find that you do by no means give up the Brit: zoology: that I think should be your principal object: & I hope you will continue to revise it at your leisure, & to re-touch it over 'til you have render'd it as perfect as the nature of the work will admit of. If people that live in the country would take a little pains, daily observations might be made with respect to animals, & particularly regarding their life & conversation, their actions & œconomy, which are the life & soul of natural history.

Every species of the swallow-kind take their drink by sipping the water as they skim lightly over the surface of it—

> . . . . . flumina libant
> Summa leves . . . . .
>
> —VIRG.

They never settle to drink like other birds.

[1] The original letter is dated May 12th, 1770.—[R. B. S.]

As it looks somewhat like dissimulation, I shall not conceal from you any longer that I sometimes receive from Gibraltar communications in the natural way. And the reason I have not imparted them to you from time to time was, because my Brother, from the time he was put on looking about him, conceived a design of drawing-up somewhat of a natural history of those Southern parts of Europe. The apes on the rock of Gibraltar have no tails.]

On *Michaelmas-day* 1768 I managed to get a sight of the female moose belonging to the duke of *Richmond*, at *Goodwood;* but was greatly disappointed, when I arrived at the spot, to find that it died, after having appeared in a languishing way for some time, on the morning before. However, understanding that it was not stripped, I proceeded to examine this rare quadruped: I found it in an old greenhouse, slung under the belly and chin by ropes, and in a standing posture; but, though it had been dead for so short a time, it was in so putrid a state that the stench was hardly supportable. The grand distinction between this deer, and any other species that I have ever met with, consisted in the strange length of it's legs; on which it was tilted up much in the manner of the birds of the *grallæ* order. I measured it, as they do an horse, and found that from the ground to the wither, it was just five feet four inches; which height answers exactly to sixteen hands, a growth that few horses arrive at: but then, with this length of legs, it's neck was remarkably short, no more than twelve inches; so that, by straddling with one foot forward and the other backward, it grazed on the plain ground, with the greatest difficulty, between its legs; the ears were vast and lopping, and as long as the neck; the head was about twenty inches long, and ass-like; and had such a redundancy of upper lip as I never saw before, with huge nostrils. This lip, travellers say, is esteemed a dainty dish in *North America.* It is very reasonable to suppose that this creature supports itself chiefly by browsing of trees, and by wading after water plants; towards which way of livelihood the length

of legs and great lip must contribute much. I have read somewhere that it delights in eating the *nymphæa*, or water-lily. From the fore-feet to the belly behind the shoulder it measured three feet and eight inches: the length of the legs before and behind consisted a greal deal in the *tibia*, which was strangely long; but, in my haste to get out of the stench, I forgot to measure that joint exactly. Its scut seemed to be about an inch long; the colour was a grizzly black; the mane about four inches long; the fore-hoofs were upright and shapely, the hind flat and splayed. The spring before it was only two years old, so that most probably it was not then come to its growth. What a vast tall beast must a full-grown stag be! I have been told some arrive at ten feet and a half! This poor creature had at first a female companion of the same species, which died the spring before. In the same garden was a young stag, or red deer, between whom and this moose it was hoped that there might have been a breed; but their inequality of height must have always been a bar to any commerce of the amorous kind. I should have been glad to have examined the teeth, tongue, lips, hoofs, &c. minutely; but the putrefaction precluded all farther curiosity. This animal, the keeper told me, seemed to enjoy itself best in the extreme frost of the former winter. In the house they showed me the horn of a male moose, which had no front-antlers, but only a broad palm with some snags on the edge. The noble owner of the dead moose proposed to make a skeleton of her bones.

Please to let me hear if my female moose corresponds with that you saw; and whether you think still that the *American* moose and *European* elk are the same creature.

I am, with the greatest esteem,

[Your most humble servant,

GIL: WHITE.

The *Caprimulgus* has not been heard yet.]

LETTER XXIX

TO THE SAME

SELBORNE, *May 12th*, 1770.

DEAR SIR,—Last month we had such a series of cold turbulent weather, such a constant succession of frost, and snow, and hail, and tempest, that the regular migration or appearance of the summer birds was much interrupted. Some did not show themselves (at least were not heard) till weeks after their usual time; as the *black-cap* and *white-throat;* and some have not been heard yet, as the *grass-hopper-lark* and largest *willow-wren*. As to the *fly-catcher*, I have not seen it; it is indeed one of the latest, but should appear about this time: and yet, amidst all this meteorous strife and war of the elements, two swallows discovered themselves as long ago as the eleventh of *April*, in frost and snow; but they withdrew quickly, and were not visible again for many days. House-martins, which are always more backward than swallows, were not observed till *May* came in.[1]

Among the *monogamous* birds several are to be found, after pairing-time, single, and of each sex; but whether this state of celibacy is matter of choice or necessity, is not so easily discoverable. When the house-sparrows deprive my martins of their nests, as soon as I cause one to be shot, the other, be it cock or hen, presently procures a mate, and so for several times following.

[1] This sentence formed part of the previous letter in the original MS., which was dated "May 12th, 1770." The rest of the letter does not appear in the MS. Letters to Pennant, and appears to have been an interpolation in Gilbert White's published work.—[R. B. S.]

Otter.

½ Life size.

I have known a dove-house infested by a pair of white owls, which made great havock among the young pigeons: one of the owls was shot as soon as possible; but the survivor readily found a mate, and the mischief went on. After some time the new pair were both destroyed, and the annoyance ceased.[1]

Another instance I remember of a sportsman, whose zeal for the increase of his game being greater than his humanity, after pairing-time he always shot the cock-bird of every couple of partridges upon his grounds; supposing that the rivalry of many males interrupted the breed: he used to say, that, though he had widowed the same hen several times, yet he found she was still provided with a fresh paramour, that did not take her away from her usual haunt.

Again; I knew a lover of setting, an old sportsman, who has often told me that soon after harvest he has frequently taken small coveys of partridges, consisting of cock-birds alone; these he pleasantly used to call old bachelors.

There is a propensity belonging to common house-cats that is very remarkable; I mean their violent fondness for fish, which appears to be their most favourite food: and yet nature in this instance seems to have planted in them an appetite that, unassisted, they know not how to gratify: for of all quadrupeds cats are the least disposed towards water; and will not, when they can avoid it, deign to wet a foot, much less to plunge into that element.

Quadrupeds that prey on fish are amphibious: such is the otter, which by nature is so well formed for diving that

[1] Sir William Jardine adds the following note (ed. "Selborne," 1853, p. 84 *note*): "This takes place generally, and in the case of carrion crows we have known it occur more than once in the same spring. Birds of prey immediately find another mate when any accident happens to one of the pair. The grey-backed or hooded crow, *Corvus cornix*, Linn., is a migratory species in many parts, and when any accidental circumstances cause one or two birds to remain, they mate in spring with the carrion crow. This instinctive desire for procreation is not however confined to birds; when the male salmon has been killed from his mate on the spawning-bed, his place is immediately supplied by another."—[R. B. S.]

it makes great havock among the inhabitants of the waters. Not supposing that we had any of those beasts in our shallow brooks, I was much pleased to see a male otter brought to me, weighing twenty-one pounds, that had been shot on the bank of our stream below the *Priory*, where the rivulet divides the parish of *Selborne* from *Harteley-wood*.

[LETTER XXIX*a*[1]

TO THE SAME

SELBORNE, *July 12th*, 1770.

DEAR SIR,—A journey to London, & an other since, from whence I am but just returned, have prevented my paying that attention to your last letter, that I could have wished.

If you knew how little I had to communicate to you with respect to specimens from Gibraltar 'til I went last to town, you would not think I had neglected you: for 'til that time I had only received two *muscicapæ*, & three insects.[2] One of the birds proves, I find, to be Edwards's grey redstart[3] the other, which has a white forehead, a tawny occiput & scapulars, black wings, a white rump, & black & white tail, black throat & cheeks, a tawny breast & whitish belly . . . I cannot at present ascertain.[4]

When I came to town I found a box containing several birds; the most curious of which are—

Merops apiaster,	Stays all the summer.
Loxia coccothraust,	Stays autumn and winter.
Motacilla stapazina,	Comes in autumn.

---

[1] I have reproduced in the present edition the letters addressed to Pennant by Gilbert White on the subject of the Gibraltar birds sent by his brother John. —[R. B. S.]

[2] The three insects were a *panorpa eoa;* rare and peculiar in it's hind wings! a large fine *vespa*, the *crabroni congener* in *Italiâ capta Raij:* vid. *Hist. Insect*, p. 250; and a large ichneumon.—[G. W.]

[3] The Black Redstart (*Ruticilla titys*) of modern authors.—[R. B. S.]

[4] This certainly must be *Saxicola stapazina*, but what can be the *Motacilla stapazina* of the succeeding list?—[R. B. S.]

Puffin, Razor-bill,	} Stay all the winter.
Lanius excubitor,[1]	Common in Spain.
Charadrius calidris,	Winter and summer.
Hirundo hyberna,	Seen only in winter.
Scolopax glottis,	Common in winter.
Tetrao coturnici similis, pedibus tridactylis,	{ Smaller than the quail, & called trail, or terraile.[2]
Edwards's grey redstart,	{ Frequents the same solitary parts as the redstart.

The *hirundo hyberna* (for so I have named it) will prove, I trust, a curiosity: for I cannot find it among Brisson's 17 species, nor among the 12 species of the *Syst: Nat:* It has the aspect of an *hirundo riparia;* but seems (for I have had no opportunity of comparing it yet with our bank-martin) to be much larger, & to have a redder cast on the throat, breast & belly. Every feather of the tail, except the two midmost & the two outmost, has a remarkable white spot about midway.

If the quail should prove to be a tridactyl species, & not a variety, it will be curious. My Bro^{r} speaks of them as common; & mentions the name by which sportsmen distinguish them. For my part I think my specimen is in colour much like a common hen-quail. Brisson mentions quails in Madagascar that have no back toe;[3] but the cocks at least of his sort have a black throat, which mine has not.

The most curious Insects in my bottles were—

Scorpio Europæus,	Onisci,
A large cicade,	Several Labri,
Blatta Americana,	*Arnoglossus, solea lævis Raij*,
Some Caterpillars,	*Coryphæna psittacus*,
Some Scarabæi,	Cancer arctus,
Scolopendra coleoptrata,	Several curious cancri not ascertained,
Mantis religiosa,	Cancer Diogenes, &c.
Spiders,	
Asilus barbarus,	

[1] The Spanish Grey-Shrike (*Lanius meridionalis*).—[R. B. S.]

[2] The Andalusian Bush-Quail (*Turnix sylvatica*), Spanish "Torillo" (Irby).—[R. B. S.]

[3] *Turnix nigricollis* (Gm.).—[R. B. S.]

Some of the fishes were :—

Syngnathus acus,
Syngnathus hippocampus,
Salmo eperlanus,
Mullus barbatus,
Several spari,
Perca marina,
Sepia sepiola, &c.

But I refer you to M^r^ Barrington with respect to the fishes, who, with a person he is to procure, & my Bro^r^ in Thames-street, is to look them over more narrowly at his chambers.

The specimens of fishes are in general too small; in order that they might be crowded into little room. In the autumn I expect another box with many more specimens.

My acknowledgements are due for y^r^ list of South European animals, which I have sent, not doubting but that it will be of service; & also for y^e^ wing of the chatterer. On y^r^ recommendation I have desired my Brother to get Brunnick & Gouan on fishes. Returning You many thanks for y^r^ offers of assistance in our researches into the natural knowledge of Andalusia, which I am conscious will be very useful & necessary,

I conclude
Your obliged, &
Humble Servant,
GIL. WHITE.

P.S.—Please to ascertain my second *muscicapa*.

When I have the pleasure of meeting you I shall be glad to communicate my papers. Since I wrote the above I have been this evening in the forest, & have procured two bank-martins, which are every way different from my *Hirundo hyberna*.]

LETTER XXX

TO THE SAME

SELBORNE, *Aug. 1st*, 1770.

DEAR SIR,—[Your obliging letter of July 24th arrived last night: & I sit down this morning to answer it. I shall send you my little cargo of curiosities with a great deal of satisfaction. The birds are here at my house; but I will send them up to town to my Brother in Thames-street who has got the fishes; & will desire him to send them all together down to Chester. If you should think proper to order your artist to take any of my animals, I should be glad to see the drawings.

When you have ascertained the fishes, you will be pleased to give me an exact account of them. The birds will be labeled numerically 1 : 2 : 3 : &c : so that you will be able to speak of them with precision. In particular I desire you would take good notice.]

The *French*, I think, in general are strangely prolix in their natural history. What *Linnæus* says with respect to insects holds good in every other branch: "*Verbositas præsentis sæculi, calamitas artis.*"

Pray how do you approve of *Scopoli's* new work? As I admire his "Entomologia," I long to see it [& yet Mr. Barrington gave me but an indifferent account of it.

Neither puffins nor razor-bills breed, that I can find, in Andalucia: they only winter there.]

I forgot to mention in my last letter (and had not room to insert in the former) that the male moose, in rutting time, swims from island to island, in the lakes and rivers of *North-America*, in pursuit of the females. My friend, the

chaplain, saw one killed in the water as it was on that errand in the river St. *Lawrence:* it was a monstrous beast, he told me; but he did not take the dimensions.

When I was last in town our friend Mr. *Barrington* most obligingly carried me to see many curious sights. As you were then writing to him about horns, he carried me to see many strange and wonderful specimens. There is, I remember, at Lord *Pembroke's*, at *Wilton*, an horn room furnished with more than thirty different pairs; but I have not seen that house lately.

Mr. *Barrington* showed me many astonishing collections of stuffed and living birds from all quarters of the world. After I had studied over the latter for a time, I remarked that every species almost that came from distant regions, such as *South America*, the coast of *Guinea*, &c., were thick-billed birds of the *loxia* and *fringilla* genera; and no *motacillæ*, or *muscicapæ*, were to be met with. When I came to consider, the reason was obvious enough; for the hard-billed birds subsist on seeds which are easily carried on board; while the soft-billed birds, which are supported by worms and insects, or, what is a *succedaneum* for them, fresh raw meat, can meet with neither in long and tedious voyages. It is from this defect of food that our collections (curious as they are) are defective, and we are deprived of some of the most delicate and lively genera.

[From repeated observation I find that the bank-martin is the first of the swallow-genus in bringing out its young. Young bank-martins were flyers this year (and very late are all productions this year, both vegetable & animal) on July 13: but no young swallows appeared at all this year 'til July 17. Bank-martins build their nests with the crested-dog-tail, & other fine grasses; & line them with goose-feathers. Their nests are strangely annoyed with fleas, the *pulex irritans*. It is wonderful that these birds with their very soft & feeble bills & claws should be able to terebrate such deep holes in the stubborn sand-banks: & yet there is no doubt but that these *latebræ* are bored in the manner above mentioned. For on May 26 last I saw a pair of these

sirds at work in a shallow hole: & I saw the crumbling band run down the side of the bank; & could distinguish what was fresh-worked by its colour from what had been bleached by lying in the sun.

Hoping for a continuance of y^{r} favours, & that you will indulge me with a long letter next time,

I remain, with great esteem
Your obliged, &
humble servant
GIL: WHITE.

P.S.—I have no *quilla lata.*

Sweet weather: but there will be no harvesting 'til towards the end of the month. Hops promise well.]

LETTER XXXI

TO THE SAME

SELBORNE, *Sept. 14th*, 1770.

DEAR SIR,—[A set of company which stayed with me five weeks, & from whom I parted but yesterday, unavoidably took up my time; & prevented my paying such attention to You & some other correspondents, as y^r^ engaging letters might reasonably demand.

In the first place I am to return you thanks for your epistle of Sept^r^ 2. From what I may gather from y^r^ frequent visits to the mountains, & from y^r^ nice topographical examination of those wild scenes, I begin to suspect & hope that you intend to favour y^e^ world with a nat: history of some of y^e^ counties of N: Wales.]

You saw, I find, the ring-ousels again among their native crags; and are farther assured that they continue resident in those cold regions the whole year. From whence then do our ring-ousels migrate so regularly every *September*, and make their appearance again, as if in their return, every *April?* They are more early this year than common, for some were seen at the usual hill on the fourth of this month.

An observing *Devonshire* gentleman tells me that they frequent some parts of *Dartmoor*, and breed there; but leave those haunts about the end of *September* or beginning of *October*, and return again about the end of *March*.

Another intelligent person assures me that they breed in great abundance all over the *Peak* of *Derby*, and are called there *Tor-ousels;* withdraw in *October* and *November*,

and return in spring. This information seems to throw some light on my new migration.

[If you do not receive a letter from my Brother in Thames-street in due time, you must not be surprized, because I know he is from home. He wrote me word some time ago that he had sent the birds by the Chester waggon.]

Scopoli's[1] new work (which I have just procured) has it's merit in ascertaining many of the birds of the *Tirol* and *Carniola*. Monographers, come from whence they may, have, I think, fair pretence to challenge some regard and approbation from the lovers of natural history; for, as no man can alone investigate the works of nature, these partial writers may, each in their department, be more accurate in their discoveries, and freer from errors, than more general writers; and so by degrees may pave the way to an universal correct natural history. Not that Scopoli is so circumstantial and attentive to the life and conversation of his birds as I could wish: he advances some false facts; as when he says of the *hirundo urbica* that "*pullos extra nidum non nutrit.*" This assertion I know to be wrong from repeated observation this summer; for house-martins do feed their young flying, though it must be acknowledged not so commonly as the house-swallow; and the feat is done in so quick a manner as not to be perceptible to indifferent observers. He also advances some (I was going to say) improbable facts; as when he says of the woodcock that "*pullos rostro portat fugiens ab hoste.*" But candour forbids me to say absolutely that any fact is false, because I have never been witness to such a fact. I have only to remark that the long unwieldy bill of the woodcock is per-

[1] "Annus I. Historico Naturalis,—descriptiones avium musei proprii earumque rariorum, quos vidit in vivaria augustiss. imperatoris, et in museo excell. comitis Francisci Annib. Turriani." Lipsiæ, MDCCLXVIII. In the preface to the above work Scopoli states, "Observationes meas ad scientiam naturalem et agriculturam pertinentes singulis annis erudito orbi in posterum communicabo," and the *Anni* were continued for five years, and contain some very valuable papers and observations; the first is devoted entirely to ornithology. The last (Annus V.) bears the date of MDCCLXXII."—[Jardine's ed., p. 87, notes.]

Ring-Ousel.

1/3 Life size.

haps the worst adapted of any among the winged creation for such a feat of natural affection.[1]

[I return you thanks for y^r^ proof-sheet respecting the elks: & am pleased to see that my description of the moose corresponds so well with your's. Last night as I rode home thro' Alton I found at the post-house, contained in three franks, *Mar: Th: Brunnichii Icthyologia Massiliensis:* my best acknowledgements are due for so curious & rare a present.

With the greatest esteem,
I conclude y^r^ most obliged
& humble Servant,
GIL: WHITE.]

[1] Scopoli's assertion has been verified by the subsequent observation of naturalists. Professor Newton writes to Bell (ed. "Selborne," vol. i. p. 86, note), "That the bill assists materially in carrying off and particularly in steadying the young bird while being carried, seems to be established; but the most efficient instruments are the parent's thighs, between which the chick is grasped, while the head and bill are recurved beneath."—[R. B. S.]

LETTER XXXII

TO THE SAME

SELBORNE, *October 29th*, 1770.

DEAR SIR,—[Your engaging letter of Septem^{r} 29th came safe to this place : but not finding me at home, it pursued me down to a village near Lewes in Sussex, where I stayed three weeks, & from whence I wrote a long letter to M^{r}. Barrington.

Tho' I had little or no doubt concerning my *Hirundo hyberna*, but that it must be the *Hir: rupestris* of Scopoli : yet I was pleased to have the sanction of y^{r} Judgement, & to find that we so readily concurred.

Notwithstanding the Quail appears to be a nondescript & a new species ; yet I think it merits farther enquiry : & I shall accordingly desire my Brother to procure more specimens, & to satisfy himself thoro'ly that the back toe is always wanting ; & also to get an old bird of each sex.

No : 5 : as you say seems also to be a nondescript. It is by no means a cold-finch as I once also thought : for I have several cold-finches by me, which differ widely from this little bird both by having a white spot in their foreheads, & a white speculum in their wings. The male bird, had it not some white in its tail, resembled most (as far as I can remember) the black-cap.

In the firstplace M^{r}. Ray classes his *Junco* as improperly

as he does his sedge-bird; for with all deference neither of them have any relation to the chapter where they are put: & in the next place he does not describe it well, for it has not a stiff, wood-pecker-like tail; neither are the thighs remarkably strong, & muscular.

You tender me Kramer in so obliging a manner, & give so tempting a description of his Fauna, that I don't know how to waive so pleasing an offer: & yet I should be sorry to give you any trouble on that account.

I will desire my Bro^{r} to take the height of the rock of Gibraltar: was it not stupendous, there could not be such a resort & rendezvous of so many sorts of wild & shy birds amidst such a concourse of people. In an E: wind or levant the top is usually capped with a fog.

On Saturday night last I was gratifyed with y^{r} pleasing letter of Octob: 21. I mention this circumstance to shew you that I lose no time in returning y^{r} fine drawings, as you desired they might not be detained. Your Artist has done my birds a great deal of credit, as well as himself; & I hope they will get safe back without any injury. The *Junco* is finely expressed; & the Quail is, I think, as lovely a drawing as ever I saw. If I might object at all to any part of the performance it should be to the right wing of the *Hirundo*, which perhaps is rather stiff, & to the middle of the tail which seems too round. For the tail, tho' not forked, is some what emarginated, as Scopoli observes. The oval spots of the tail, which are characteristic of this species, are well hit off. The secondary wing-feathers are, you must observe, deeply knotched.

I rejoice in y^{r} acquisition of N: American animals: & am pleased to find that you persist in additions to y^{r} Brit: zoology illustrated. Such hints as occur on any of those subjects shall be much at y^{r} service.

It gives me real pleasure to hear that the report concerning M^{r}. Banks is groundless. If there should be a rupture with Spain my Bro^{r} will be much circumscribed in his

excursions; as he has been already this summer by the death of his horse.]

[1]After an ineffectual search in *Linnæus*, *Brisson*, &c., I begin to suspect that I discern my brother's[2] *hirundo hyberna* in Scopoli's new discovered *hirundo rupestris*, p. 167. His description of "*Supra murina, subtus albida; rectrices maculâ ovali albâ in latere interno; pedes nudi, nigri; rostrum nigrum; remiges obscuriores quam plumæ dorsales; rectrices remigibus concolores; caudâ emarginatâ, nec forcipatâ . . .*" agrees very well with the bird in question. But when he comes to advance that it is "*statura hirundinis urbicæ:*" & that "*definitio hirundinis ripariæ Linnæi huic quoque convenit,*" he in some measure invalidates all he has said: at least he shews at once that he compares them [if they are really the same with my Brother's] to these species merely from memory: for I have compared them with the birds themselves, and find they differ widely in

[1] In the original MS. this and the next two paragraphs formed part of the preceding letter of September 14, 1770.—[R. B. S.]

[2] The Swallow which John White noticed at Gibraltar has always been considered to be identical with Scopoli's *Hirundo rupestris*, as is here first suggested by Gilbert White. The identification has received the imprimatur of Professor Newton (*cf.* Bell's ed., ii. pp. 5, 6). Writing to his brother Gilbert in November 1769, John says that "the winter martins begin to appear in a different dress; they are blacker on the back, and whiter under the belly than last winter." He suspects also that they "are the real summer martins now undergoing a change of colour, and possibly intending to winter here in a browner habit." Gilbert quotes these sentences from John's letter of November, and then aptly observes: "And yet in your letter of April 14 you only say in general, that you saw (March 23) swallows, martins, and your brown winter martins all flying together. This most curious article of all your intelligence will not, I hope, remain dubious, and unsettled" [*cf.* Letter I to John White (Bell's ed., vol. ii. p. 1) dated May 26, 1770]. In a second letter to his brother, written on the 25th of January 1771, Gilbert says: "Your winter swallow is undoubtedly the *Hirundo rupestris* of Scopoli; you, however, will have the credit of discovering its winter quarters" (Bell's ed., vol. ii. p. 6). On June 30, 1771, John White writes direct to Linnæus from Gibraltar, and says: "The *Hirundo rupestris caudâ emarginata non forcipatâ* of Scopoli breeds in the inland mountains of Andalucia and Grenada, and in the winter, when those mountains are covered with snow, resides regularly on those coasts, and migrates for a short time only into Barbary." In August 1772 Linnæus acknowledges the receipt of some specimens of birds from John White, promising to work at them more fully. He remarks concerning the *Hirundo*

every circumstance of shape, size, and colour. However as you will have a specimen, I shall be glad to hear your judgment in this matter.

Whether my brother is forestalled in his non-descript or not, he will still have the credit of first discovering that they spend their winters under the warm and sheltry shores of *Spain* and *Barbary*.

Scopoli's characters of his ordines and genera are clean, just, and expressive, & much in the spirit of *Linnæus*. These few remarks are the result of my first hasty perusal of *Scopoli's Annus Primus*.

The bane of our science is the comparing one animal to the other by memory: for want of caution in this particular *Scopoli* falls into errors: he is not so full with regard to the manners of his indigenous birds as might be wished, as you justly observe: his Latin is easy, elegant, and expressive, and very superior to *Kramer*'s.[1]

rupestris: "mihi antea ignota, verē distincta," but in January 1774 he says of it (Letter VI, Bell's ed., vol. ii. p. 80): "Nescio an varietas *apus*." Again in Letter IX (*l.c.* p. 89) he writes: "*Hirundo rupestris* nigricans, rectricibus subæqualibus: 2, 3. maculâ albâ." The letters of Linnæus were forwarded by John to Gilbert, who comments on them: "Linnæus's letter is polite and entertaining and instructive. But pray what does he mean by saying that your *Hirundo hyemalis* (for so I shall still call it) is . . . *varietas apus?* for the *apus* and *melba* only perhaps have *omnibus quatuor digitis anticis*, while your swallow has a back toe like other birds; besides the bill of your *apus* and *melba* are much *bent;* but that of the *hirundo hyemalis* is *straight*." (Letter XIV, Bell's ed., vol. ii. p. 30.) In forwarding the other Linnæan letter to Gilbert, John adds the remarks: "He is wrong in saying only 2. 3. *maculis albis* in the tail of *Hirundo rupest.* It ought to be 2. 3. 4. 5." In a final letter to Linnæus, dated Oct. 8, 1774, he writes: "*Hirundo rupestris*, Scop., mihi potius (pace tuâ) *hyemalis* dicenda; nam ipsa, sola forsan inter *Hirundines*, hyemes nobiscum degit, Hujus rectrices 2. 3. maculâ albâ dicis; at reverā 2. 3. 4. 5. albo maculantur." This letter, Professor Bell with reason imagines, would not have been read by Linnæus, who at that time had been obliged to relinquish work owing to an attack of apoplexy (*cf.* Bell's ed., vol. ii. p. 94).

I have very little doubt that John White's *early* remarks on his "winter martin," which puzzled Gilbert, referred to the adults of the Common House Martin (*Chelidon urbica*), the young birds of this species being duller in colour than the old ones, especially on the under surface. The adult birds would appear "blacker on the back, and whiter under the belly."—[R. B. S.]

[1] See his *Elenchus vegetabilium et animalium per Austriam inferiorem*, &c. —[G. W.]

[I have more to say but my servant will be too late for the post which I would not lose.

Regarding y^r^ correspondence as a very pleasing circumstance of my life & hoping for a continuance of it.

I remain with great esteem
Your obliged, &
humble Servant,
GIL : WHITE.]

LETTER XXXIII[1]

TO THE SAME

SELBORNE, *Nov. 26th*, 1770.

DEAR SIR,—I was much pleased to see, among the collection of birds from *Gibraltar*, some of those short-winged *English* summer-birds of passage, concerning whose departure we have made so much inquiry. Now if these birds are found in *Andalusia* to migrate to and from *Barbary*, it may easily be supposed that those that come to us may migrate back to the continent, and spend their winters in some of the warmer parts of *Europe*. This is certain, that many soft-billed birds that come to *Gibraltar* appear there only in spring and autumn, seeming to advance in pairs towards the northward, for the sake of breeding during the summer months; and retiring in parties and broods towards the south at the decline of the year: so that the rock of *Gibraltar* is the great rendezvous, and place of observation, from whence they take their departure each way towards *Europe* or *Africa*.[2]

[1] This seems to have been a letter introduced by Gilbert White into his book, as there is no letter of this date in the MS. correspondence in the British Museum.—[R. B. S.]

[2] The course of migration of many species from Western Europe to Africa and the return journey in spring takes place by the Gibraltar route (*cf.* Irby Ornithology of Gibraltar), though Gilbert White had no idea that the migrations of some of our small Warblers were continued far beyond the Mediterranean basin, even to Senegambia, the Gold Coast, and Nigeria. Some of them doubtless cross the Sahara, which they reach by some of the migration routes of Western Europe:—through the Pyrenees and across Spain and Portugal to Gibraltar, and thence by way of Morocco to West Africa, either directly south or by following the coast-line; or along the Rhine Valley through Switzerland, reaching Algeria by way of Corsica and Sardinia; or by way of Italy, Sicily, and Malta to the

It is therefore no mean discovery, I think, to find that our small short-winged summer birds of passage are to be seen spring and autumn on the very skirts of *Europe;* it is a presumptive proof of their emigrations.

Scopoli seems to me to have found the *hirundo melba*, the great *Gibraltar* swift, in *Tirol*, without knowing it. For what is his *hirundo alpina* but the afore-mentioned bird in other words? Says he "*Omnia prioris*" (meaning the swift); "*sed pectus album; paulo major priore.*" I do not suppose this to be a new species. It is true also of the *melba*, that "*nidificat in excelsis Alpium rupibus.*" *Vid. Annum Primum.*[1]

My *Sussex* friend, a man of observation and good sense, but no naturalist, to whom I applied on account of the *stone-curlew*, *œdicnemus*, sends me the following account: "In looking over my Naturalist's Journal for the month of *April*, I find the *stone-curlews* are first mentioned on the seventeenth and eighteenth, which date seems to me rather late. They live with us all the spring and summer, and at the beginning of autumn prepare to take leave by getting together in flocks. They seem to me a bird of passage that may travel into some dry hilly country south of us, probably Spain, because of the abundance of sheep-walks in that country; for they spend their summers with us in such districts. This conjecture I hazard, as I have

North African coast. The principal route of migration to South Africa, however, is undoubtedly by way of the Nile Valley and the Great Lakes. Our knowledge of the phenomenon of Bird-migration, though increasing year by year, is still but small. The following pertinent remarks by Sir William Jardine occur in his note to the above letter (ed. "Selborne," p. 91, note): "The letters from his brother while at Gibraltar would be exceedingly interesting to White while his attention was turned to migration, and there is little doubt that the great bulk of our migratory species follow the line as suggested in the text; at the same time, however, some of the species, the common swallow, for instance, has a very extensive range, and I believe is permanently resident nowhere. The more distant cannot be expected to reach Northern Europe or Great Britain, which in all probability are supplied from North or North-Eastern Africa."—[R. B. S.]

[1] The bird here referred to is the Alpine Swift (*Apus melba*), and Gilbert White is quite right in his identification. The species has occurred some twenty times in Great Britain (*cf.* Howard Saunders, Man. Brit. B., 2nd ed., p. 263, 1899).—[R. B. S.]

Thick-knee.

½ Life size.

never met with any one that has seen them in *England* in the winter. I believe they are not fond of going near the water, but feed on earth-worms, that are common on sheep-walks and downs. They breed on fallows and lay-fields abounding with grey mossy flints, which much resemble their young in colour; among which they skulk and conceal themselves. They make no nest, but lay their eggs on the bare ground, producing in common but two at a time. There is reason to think their young run soon after they are hatched; and that the old ones do not feed them, but only lead them about at the time of feeding, which, for the most part, is in the night." Thus far my friend.

In the manners of this bird you see there is something very analogous to the bustard, whom it also somewhat resembles in aspect and make, and in the structure of its feet.

For a long time I have desired my relation to look out for these birds in *Andalusia;* and now he writes me word that, for the first time, he saw one dead in the market on the third of *September.*

When the *œdicnemus* flies it stretches out it's legs straight behind, like an heron. I am, &c.

[LETTER XXXIII*a*

SELBORNE: *Jan:* 12, 1771.

DEAR SIR,—This day my box with the whole of my curiosities sets out by the waggon on its way to London; from whence it will be forwarded by my Bro^{r} to Chester.

You will be so kind as to examine the contents, & to order y^{r} artist to draw such as are worthy of y^{r} notice; & to favour me with your opinion concerning the most rare, & particularly the fishes, which need not be returned.

The reason that my Bro^{r} sent only the head & the feet of the vulture was, because he never had any other part. The bird was found dead & floating in the sea; an accident it seems not very uncommon: some fishermen picked it up, & flayed it; eat the carcase, & threw away the skin, & gave him the head & feet. But as the Governor has got a live bird of this sort, my Bro^{r} will take care to describe that minutely.

Please to be particular about the partridges. My last cargo of birds returned very safe from y^{r} house.

I thank you for the Portugal *apiaster*, which differs somewhat from the Andalusian.

It is no small discovery, I think, to find that our small short-winged summer birds of passage are to be seen spring & autumn on the very skirts of Europe: it is a very strong presumptive proof of their migration.

Your proof-sheet meets with my approbation. I always was of opinion that the stile should be in some measure adapted to the length of the composition, or the subject in all cases: & therefore long flowing sentences

can't be suitable to short descriptions in a work that professes to be a synopsis.

If you should think it proper to have the *Hirundo melba* taken, would it not be right to have it drawn on its back ; because the colour of the belly is, size excepted, the chief thing that distinguishes it from the *Hir: apus.* It is a swift to all intents & purposes.

You pay us a great compliment when you say that our account of Gibraltar will in a manner comprehend the animals of South Europe. It is a work, I must acknowledge, that I could wish to see reduced to some degree of correctness: & therefore am much gratifyed whenever you tender us y^r^ best assistance, which I am perswaded would be it's best support. I have been in a pother lately about writing to that place, fearing lest this misunderstanding between the two nations may interrupt the correspondence by the post ; & suspecting my last letter never reached my Bro^r.^ M^r.^ Barrington seems to think that the intercourse is still subsisting.

I have looked over M^r.^ Forster's catalogue of British insects, & have somewhat to advance on that subject: but time will not permit me at present, as I am pretty much hurryed. We have had vast rains for these ten weeks past, & some great storms ; especially one on y^e^ 20^th^ of Dec^r.^ in the morning: now severe frost.

Hoping y^r^ troublesome cold has left you, & desiring you to accept of the good wishes of the season,

I conclude with great esteem,

Y^r^ obliged, &

humble servant,

GIL: WHITE.]

LETTER XXXIV

TO THE SAME

SELBORNE, *March 30th*, 1771.

DEAR SIR,—[Your agreeable letter of Feb: 15th arrived while I was from home: & since my return some what still has prevented my sitting down to pay it that regard which it deserved.

You may probably have heard by means of Mr. Barrington, who saw the contents while they lay in town, that I have received another small cargo of birds from Gibraltar, with a curious collection of insects. The birds were as follow:

Merops apiaster, 3 specims
Loxia curvirostra:
Scolopax ægocephala, M: & F:
- - - - *phœopus:*
Oriolus galbula, 2 spec:
Alauda cristata:
Alauda - - -? 2 spec:
Coturnix tridact: mas:
Mot. ænanthe, M: & F:
Rallus aquat:
Motacilla flava:
Œnanthe?
Charadrius hiaticula:
Hematopus ostralegus:
Leg & wing of *strix bubo:*
Leg of *ardea nycticorax:*
Turdus arundinaceus

Where a wing or a leg or an head only are sent you are to suppose that the whole specimen was too stale & too far gone to be preserved before it reached my Bro[r]s hands. The *alauda* unknown answers well in many respects to the *Spipoletta Florentinis* of Ray. But as that most accurate writer says that the *rostrum* of the *spipoletta* is *nigerrimum*, & *pedes etiam nigri*, I must by no means pretend to say that my birds are the above-mentioned

when their bills & legs are brown: & especially since all ornithologists agree that y^e^ naked parts of birds are the least apt to vary in colour. As to the *œnanthe* I don't know at all what to make of it: it appears to me more like a variegated accidental specimen than a new species: but I shall hear what you have to say. The outer edge of the first quill-feather of the wing of the *strix bubo* is serrated: a circumstance which Linn: seems not to be aware of; for if he had he would never have made it specific to his *strix aluco:* since what is common to more than one species cannot be specific. But such slips are pardonable nay unavoidable *opere in longo.*

As the *orioli galb*: are birds of last year their colour is by no means come to its full splendor. My Bro^r.^ has much to say in defence of his supposition that his Spanish & Barbary partridges are different species. In one of his last letters his words are, "I am perfectly clear about the difference of the Span: & Bar: partridge. I have examined multitudes of each, & never found the least exception to my remark. . . that the Bar: sort has always the chestnut collar, cheeks, &c., spotted with white;[1] the Span: sort always has those parts black, & the collar of a different form. The distinction is invariable; & I wonder no one remarked it. The Span: is rather the larger bird. Indeed on a careful comparison the whole disposition even of those colours which correspond in each bird differs."

Shaw's travels are to be met with in Gibraltar; & my Bro^r^ had discovered himself that the tridactyl quail was known to the D^r.^ in Barbary: however we are equally obliged to you for y^r^ hint. Gannets are never seen about Gibraltar 'til Nov: they retire again about March. My Bro^r^ shall try to procure the bird for you from the Barbary coast.

[1] This is the Barbary Partridge (*Caccabis petrosa*) and the other is the Spanish Red-legged Partridge (*Caccabis hispanica*). John White was quite right as regards the distinctive characters of the two species.—[R. B. S.]

I shall make a point of meeting you in town. It is time now to have a little conversation face to face after we have corresponded so freely for several years.][1]

There is an insect[2] with us, especially on chalky districts, which is very troublesome and teasing all the latter end of the summer, getting into people's skins, especially those of women and children, and raising tumours which itch intolerably. This animal (which we call an harvest bug) is very minute, scarce discernible to the naked eye; of a bright scarlet colour, and of the genus of *Acarus*. They are to be met with in gardens on kidney-beans, or any legumens; but prevail only in the hot months of summer. Warreners, as some have assured me, are much infested by them on chalky downs; where these insects swarm sometimes to so infinite a degree as to discolour their nets, and to give them a reddish cast, while the men are so bitten as to be thrown into fevers.

There is a small long shining fly in these parts very troublesome to the housewife, by getting into the chimneys, and laying its eggs in the bacon while it is drying: these eggs produce maggots called *jumpers*, which, harbouring in the gammons and best parts of the hogs, eat down to the bone, and make great waste. This fly I suspect to be a variety of the *musca putris* of *Linnæus:* it is to be seen in the summer in farm-kitchens on the bacon-racks and about the mantle-pieces, and on the ceilings.

The insect that infests turnips and many crops in the garden (destroying often whole fields while in their seedling leaves) is an animal that wants to be better known. The country people here call it the *turnip-fly* and *black-dolphin;* but I know it to be one of the *coleoptera;* the "*chrysomela oleracea, saltatoria, femoribus posticis crassissimis.*" In very hot summers they abound to an amazing degree, and, as you walk in a field or in a garden, make a pattering

[1] From this it would seem that Gilbert White and Pennant had not yet met.

[2] Some interesting notes by my friend Mr. R. J. Pocock on the insects here mentioned arrived too late for insertion here, and will be found in an appendix to the present volume.—[R. B. S.]

like rain, by jumping on the leaves of the turnips or cabbages.

There is an *Oestrus*, known in these parts to every ploughboy; which, because it is omitted by *Linnæus*, is also passed over by late writers; and that is the *curvicauda* of old *Mouset*, mentioned by *Derham* in his "Physico-Theology," p. 250: an insect worthy of remark for depositing its eggs as it flies in so dextrous a manner on the single hairs of the legs and flanks of grass-horses. But then *Derham* is mistaken when he advances that this *Oestrus* is the parent of that wonderful star-tailed maggot which he mentions afterwards; for more modern entomologists have discovered that singular production to be derived from the egg, of the *musca chamæleon:* see *Geoffroy*, t. 17 f. 4.

A full history of noxious insects hurtful in the field, garden, and house, suggesting all the known and likely means of destroying them, would be allowed by the public to be a most useful and important work. What knowledge there is of this sort lies scattered, and wants to be collected; great improvements would soon follow of course. A knowledge of the properties, œconomy, propagation, and in short of the life and conversation of these animals, is a necessary step to lead us to some method of preventing their depredations.

As far as I am a judge, nothing would recommend entomology more than some neat plates that should well express the *generic distinctions* of insects according to *Linnæus;* for I am well assured that many people would study insects, could they set out with a more adequate notion of those distinctions than can be conveyed at first by words alone.

[If you have a desire to see my last birds, please to intimate as much; but as you intend soon to be in town, might they not as well meet you there, & save a long carriage? but this shall be as you please.

I had written thus far when y^r^ letter of the 19 of Mar: arrived. Many thanks are due for y^r^ trouble in ascertaining so many of my Bro^rs^ fishes, and for the honour you have

done his birds in ordering so many of them to be taken. I shall transcribe y^r^ list and send it off for Gibraltar next week. My bro^r^ will be pleased to see how you have named his specimens.

When you write to Gibr : crowd y^r^ letter with hints : mine run of late in a very didactic style. You have, I find, made some alteration in y^r^ time of coming : may I presume to ask how long you stay in town ? Hoping to have the honour of seeing you soon,

I remain with great esteem
Your obliged, &
humble Servant,
GIL : WHITE.]

My thanks are due for y^r^ second part of the 4^th^ vol : which is just arrived.

LETTER XXXV

TO THE SAME[1]

SELBORNE, 1771

DEAR SIR,—[My unusual silence has not been owing to any disrespect, but to the roving, unsettled life which I have lived for this month past.

I wish you had happened to have paid a little more attention to the pair of larks which came over in my last collection ; because they seemed to me to be quite a different species from any sent before: & I should not have hesitated to have called them the *Spipoletta Florentinis Raii*, had they had black feet & black bills. The variegated *ænanthe* also deserved your regard. But I will endeavour to send both sorts again when I have an opportunity, that you may survey them both at your leisure. My thanks are due for y^r^ setting us right where some birds were misnamed.

It is a great satisfaction to me to find that you & my Brother at Gibraltar are embarked in a correspondence. You are capable of giving each other mutual entertainment: & my Bro^r^ (as by much the youngest Naturalist) will derive from you much information, & many useful hints & queries. What from his natural propensity, & application, from the assistance of ingenious friends, & from the copious field of the South of Spain, which he has all to himself, I doubt not now but that in time he

[1] The letter as published was very short, but forms part of a long one written to Pennant, and dated July 19, 1771.—[R. B. S.]

will be able to produce somewhat worthy the attention of men who love these studies. As to any publication in this way of my own, I look upon it with great diffidence, finding that I ought to have begun it twenty years ago. But if I was to attempt anything, it should be somewhat of a Nat: history of my native parish; an *annus-historico-naturalis*, comprizing a journal for one whole year, & illustrated with large notes, & observations. Such a beginning might induce more able naturalists to write the history of various districts; & might in time occasion the production of a work so much to be wished for, a full & compleat nat: history of these kingdoms.

Your engraver at Chester acquits himself like an able artist: & I should be glad to know what his price is for a plate containing two or three animals. You have, I see, furnished the Gent: Mag: for last month with a plate & some descriptions. The conduct[r] of that publication will no doubt rejoice in such a correspondent.]

Happening to make a visit to my neighbour's peacocks, I could not help observing that the trains of those magnificent birds appear by no means to be their tails; those long feathers growing not from their *uropygium*, but all up their backs. A range of short brown stiff feathers, about six inches long, fixed in the *uropygium*, is the real tail, and serves as the *fulcrum* to prop the train, which is long and top-heavy, when set an end. When the train is up, nothing appears of the bird before but it's head and neck; but this would not be the case were those long feathers fixed only in the rump, as may be seen by the turkey-cock when in a strutting attitude. By a strong muscular vibration these birds can make the shafts of their long feathers clatter like the swords of a sword-dancer; they then trample very quick with their feet, and run backwards towards the females.

I should tell you that I have got an uncommon *calculus ægogropila*, taken out of the stomach of a fat ox; it is perfectly round, and about the size of a large *Seville* orange; such are, I think, usually flat.

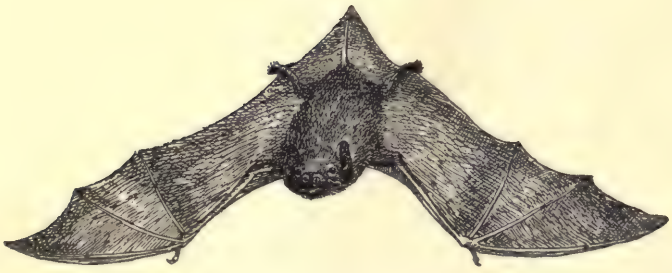
A VISIT TO MY NEIGHBOUR'S PEACOCKS

[I have just read with satisfaction & improvement Kalm's journey thro' N : America : but as he is continually referring to an other work he cuts us very short often times both in botany and zoology.

Yesterday I had a letter from town which mentions the safe return of M^r. Banks ; & adds that he looks as well as ever he did in his life. So agreeable an event calls for my warmest congratulations. For if we rejoice at the arrival of a friend who has been absent but a few months perhaps in a neighbouring kingdom : how shall we express ourselves when we see one restored as it were from the other world, after having undergone the astonishing hazards & dangers that must attend the circumnavigation of the world itself ! ! !

I have great reason to regret my disappointment of not meeting you in town : but as we live by hope I trust that I shall be more fortunate an other time.

With great esteem I remain
Your obliged, &
most humble Servant,
GIL : WHITE.]



LETTER XXXVI

TO THE SAME

Sept. [25], 1771.

DEAR SIR,—The summer through I have seen but two of that large species of bat which I call *vespertilio altivolans*, from its manner of feeding high in the air: I procured one of them, and found it to be a male; and made no doubt, as they accompanied together, that the other was a female: but, happening in an evening or two to procure the other likewise, I was somewhat disappointed, when it appeared to be also of the same sex. This circumstance, and the great scarcity of this sort, at least in these parts, occasions some suspicions in my mind whether it is really a species, or whether it may not be the male part of the more known species, one of which may supply many females; as is known to be the case in sheep, and some other quadrupeds. But this doubt can only be cleared by a farther examination, and some attention to the sex, of more specimens: all that I know at present is, that my two were amply furnished with the parts of generation, much resembling those of a boar.[1]

In the extent of their wings they measured fourteen inches and an half; and four inches and an half from the

[1] Jardine's note is as follows: "See Letters XXII, XXVI. The British auna is indebted to White for the first notice of this species; it is locally distributed, and although not common generally is found in numbers together, so many as 185 having been taken in one night from the eaves of Queens' College, Cambridge. It was first described by Daubenton, under the name of *La noctule*, which name Latinised was afterwards continued, and is prior to White's name of *altivolans*, which we regret has not been retained, as it is so characteristic of the habits of the species."—(Ed. "Selborne," p. 97.)

nose to the tip of the tail: their heads were large, their nostrils bilobated, their shoulders broad and muscular; and their whole bodies fleshy and plump. Nothing could be more sleek and soft than their fur, which was of a bright chesnut colour; their maws were full of food, but so macerated that the quality could not be distinguished; their livers, kidnies, and hearts, were large, and their bowels covered with fat. They weighed each, when entire, full one ounce and one drachm. Within the ear there was somewhat of a peculiar structure that I did not understand perfectly; but refer it to the observation of the curious anatomist. These creatures sent forth a very rancid and offensive smell.

LETTER XXXVII[1]

TO THE SAME

SELBORNE, 1771.[1]

DEAR SIR,—On the twelfth of *July* I had a fair opportunity of contemplating the motions of the *caprimulgus*, or fern-owl, as it was playing round a large oak that swarmed with *scarabæi solstitiales*, or fern-chafers. The powers of it's wing were wonderful, exceeding, if possible, the various evolutions and quick turns of the swallow genus. But the circumstance that pleased me most was, that I saw it distinctly, more than once, put out it's short leg while on the wing, and, by a bend of the head, deliver somewhat into its mouth. If it takes any part of it's prey with it's foot, as I have now the greatest reason to suppose it does these chafers, I no longer wonder at the use of it's middle toe, which is curiously furnished with a serrated claw.[2]

Swallows and martins, the bulk of them I mean, have forsaken us sooner this year than usual; for on *September* the twenty-second, they rendezvoused in a neighbour's walnut-tree, where it seemed probable they had taken up their lodging for the night. At the dawn of the day, which was foggy, they arose all together in infinite numbers, occasioning such a rushing from the strokes of their wings against the hazy air, as might be heard to a considerable distance: since that no flock has appeared, only a few stragglers.

[1] This letter forms part of the original letter of Sept. 25, 1771.—[R. B. S.]

[2] The use of the serrated claw in the night-jar has been discussed by many ornithologists. It is not likely that the foot has any *seizing* power, but as the bristles which beset the bird's gape may become clogged with the wings of the insects on which it feeds, it is possible that White saw the bird in the act of clearing its rictal bristles by means of the comb on its claw.—[R. B. S.]

Some swifts stayed late, till the twenty-second of *August* —a rare instance! for they usually withdraw within the first week.[1]

On *September* the twenty-forth three or four ring-ousels appeared in my fields for the first time this season: how punctual are these visitors in their autumnal and spring migrations![2]

[By the next return of the waggon I shall send up a small but rare collection of birds, which I beg that You & M^r. Banks would please to examine, that I may hear what two such curious Naturalists have to say about some of them. They are as follow:—

Merula passer solitarius:	M: & F:[3]
Merula nigerrima uropygio, rectricibus que niveis:	Is not this a nondescript?[3]
Fringilla petronia:	
Sturnus collaris Scopoli:	An elegant bird!
Emberiza cirlus:	
Pratincola Krameri:	Well engraved in Kramer.
Anas clypeata pectore rubro:	Differs from our shoveler.
Species of lark:	What?
Motacilla boarula Scopoli:	
Species of perch:	What?

You are welcome to take these birds into the country, as you say London affords you no leisure for examination in such matters: & if you shall think them worthy of being drawn, you will lay us under great obligations by communicating those drawings at a proper season. My Brother makes no contemptible progress in Nat: history: & will be able, I trust, by the assistance of good friends (to whom he will be ready to make all due acknowledgements) to produce in due time somewhat not unworthy the attention of the candid Naturalist. Please to return the birds to my

[1] See Letter LIII to Mr. Barrington.—[G. W.] On the 27th of August in the present year (1899) I saw two swifts flying beneath the cliffs between Bexhill and St. Leonard's.—[R. B. S.]

[2] This and the two preceding paragraphs formed the P.S. to the original letter.—[R. B. S.]

[3] The Blue Rock-Thrush (*Monticola solitaria*) and the White-tailed Chat (*Saxicola leucusra*, Gm.).—[R. B. S.]

Bro: in Thames-street as usual. It will not be in my power to meet you in London at present, because I have a call that obliges me to go an other way.

Pray present my humble respects to Mr. Banks, & tell him I heartily congratulate him on his safe return from his astonishing voyage! The world expects great Information from his discoveries during his circumnavigation. My respects also wait on Mr. Barrington, & thanks for his letter from Beaumaris.

After returning you my acknowledgements for your present of the curious old *Rondeletius de piscibus*, I remain,

with great esteem
Your much obliged, &
Humble Servant,
GIL: WHITE.]

[LETTER XXXVII*a*

TO THE SAME

SELBORNE, *Jan:* 13, 1772.

DEAR SIR,—I sent you by the return of the Alton waggon last week such birds of my last cargoes as you had not seen before: some of which, I think, will not displease you; & of others I shall beg your friendly information, not being able to ascertain them, especially the *larks*, & the *motacillæ*. You will, I hope, also give me your opinion of the last cargo; & especially of the *white rumped* bird, & the duck; the former of which, I trust, is a *turdus*, & a rare bird, & perhaps a nondescript; & as to the latter I should be pleased to know whether it be the red-breasted shoveler of the Brit: zool: or not. My present cargo is as follows:—

Phœnicopterus ruber Mas:
Larus fidipes alter Willughbœi: N: VI?
Lanius collurio, pullus?
Lanius collurio, wood-chat from Tetuan:[1]
Sturnus niger from Tetuan: *an nova species?*[2]
Oriolus galbula:
Oriolus . . . . young or variety:
Alauda cristata:
Alauda N° 1. 2 specimens: bills long & slender; breasts tinged with yellow:[3]

---

[1] *Lanius pomeranus*, Scop.—[R. B. S.]

[2] *Sturnus unicolor*, Temm.—[R. B. S.]

[3] Probably the Spanish Crested Lark (*Galerita theclæ*, Brehm). One of the Larks was identified by John White (see his Letter, p. 164) as a Skylark, and therefore must be the Mediterranean form of our Skylark (*Alauda cantarella*). The other species would doubtless be the Short-toed Lark (*Calandrella brachy-*

Alauda N° 2. 2 spec: bills short, & taper; back claw small . . . & short; tails short, & dusky; outside feathers tinged with yellow:

Alauda? bill slender; back claw short, & rather incurved; breast a little spotted; tail long & dusky; out feathers white: is it the same with N° 1?

Motacilla N° 1: what? large: back & wings ash-colour'd; head dusky; throat, breast, belly white: tail lost: *an Motacilla dumetorum Linn: Kram: aust:* 377: n: 19?[1]

Motacilla N° 2. what? small: head, back dusky-reddish; wings dusky; outer webs chestnut-coloured; throat white, breast tinged with red; feet and legs palish:[2]

Motacilla N° 3: 2 spec: minute; head, back, wings, black, feathers edged with chestnut, resembling the *passer torquatus;* throat white, breast, belly, sides tawny; *caudâ unicolore;* elegant little birds?

In all these difficulties your obliging disposition will prompt you to assist me; & you will besides, I hope, refer so to numerical marks as to prevent mistakes, or misapprehension. It is very remarkable that of all the larks my Bro: has procured, he has never yet met with a British species. Has Brisson any larks unknown to Ray? You will find, I think, in the box two or three distinct, & unusual species. My Bro: in Thames-street has sent you the last bottles of fishes. Enclosed with the birds are some rough draughts of some fishes taken by my Bro: at Gibraltar; who tho' he knows nothing of the rules of drawing, yet, he trusts, such rude sketches will inform an Icthyologist better than mere words.

As I have a few shells & fossils, I should take it as a favour if you would (when you return the box) add a few ores, & fossils to my collection, such as y^r^ mines & neighbourhood afford: a few will be sufficient.

dactyla). If Gilbert White had but given the measurements of the specimens we should have got nearer to their identification. These letters, which I have here inserted in chronological order from the original MSS. show that not only was John White an indefatigable collector, but that Gilbert White, in his Selborne home, was capable of taking a deep interest in Ornithology beyond that of the British Islands alone.—[R. B. S.]

[1] Probably the Orphean Warbler (*Sylvia orphea*).

[2] Apparently the *Sylvia conspicillata*, Temm.

Pray when in the spring do you intend to be in town ? Still I hope to meet you there some time or other.

I am much hurried at present, & must stop here ; but propose to write again not long hence. With the Compliments of the season,

I remain with great esteem,
Your obliged, &
Humble Servant,
GIL: WHITE.

Pray when does Mr. Banks sail ?]

[LETTER XXXVII*b*

TO THE SAME

SELBORNE: *March* 19: 1772.

DEAR SIR,—Your obliging letter of Feb: 21st came safe to this place, & followed me up to town; where I also received yr favour of March 1st.

While I was in London came from Gibraltar a box containing (besides several birds which you have seen before) *Ardea alba minor:* perhaps the 6 of Ray's *synopsis avium: Charadrius alexandrinus.*[1] These are all the new birds.

In a bottle *Sparus mœna? Salmo eperlanus calpensis: blennius supercilios.: cancer arctos.*

In a phial *Squali fœtus: cancer arctos: labrus.*

These are all left with my Bro: Tho: who will add them to the cargo I am sending up.

I also looked-out the *pratincola,* which will be sent with the rest. There can be no doubt of its being a genus *per se.* When I came home I found by the Liverpool frigate a box containing :—

Mustella lutra:
Squallus glaucus:
„ *mustelus*
Uranoscopus scaber:
Trigla volitans: &
some birds seen before:
all dryed.

PHIALS

N° 1. *Gasterost: ovatus? Zeus aper: Labrus: Perca?*
„ 2. *Esox Saurus.*
„ 3. *Cancer squilla carinata: Percæ: Gobii.*
„ 4. *Cancer squil: carin: Trigla verticillata: Perca.*
„ 5. *Trigla lucerna: Trach: Draco.*

[1] The Kentish Plover.—[R. B. S.]

You will also receive the outlines of the following fishes :—

Squalus centrina: Sciæna? Borrico minor: Scomber pelamis: Sciæna: Corbo: Esox Saurus: Gasterosteus saltatrix: Lepidopus: Perca, vel Zeus? novus, capite diaphano.

Among the rest I send you the short-eared owl of Brit : zool : omitted before.

My thanks are due for y^r^ thoughts on the former cargo.

Your tour thro' Scotland appears to me to be a very engaging work : & the town, it is plain, is of the same opinion : for the book has a great run.

I regret that I was obliged to leave town before I had seen y^r^ *genera avium.* Your *synopsis quadr:* gives me satisfaction.

When I came to London I found a long letter from Linnæus to my Bro : John lying in Fleet-street, occasioned by an epistle & some phials of insects sent by the latter to the former. The old arch-naturalist writes with spirit still ; & is very open & communicative, acknowledging that several of the Insects were new to him. He languishes to see a *pratincola,* being conscious that it belongs not to the genus of *hirundo.*

Please to order the fishes that are ascertained to be thrown away ; I mean those in spirits.

I am, Sir,
Your most obedient, &
Humble servant,
GIL : WHITE.]

LETTER XXXVIII

TO THE SAME

SELBORNE, *March 15th*, 1773.

DEAR SIR,—By my journal for last autumn it appears that the house-martins bred very late, and stayed very late in these parts; for, on the first of *October*, I saw young martins in their nest nearly fledged; and again on the twenty-first of *October*, we had at the next house a nest full of young martins just ready to fly; and the old ones were hawking for insects with great alertness. The next morning the brood forsook their nest, and were flying round the village. From this day I never saw one of the swallow kind till *November* the third; when twenty, or perhaps thirty, house-martins were playing all day long by the side of the hanging wood, and over my field. Did these small weak birds, some of which were nestlings twelve days ago, shift their quarters at this late season of the year to the other side of the northern tropic? Or rather, is it not more probable that the next church, ruin, chalk-cliff, steep covert, or perhaps sandbank, lake or pool (as a more northern naturalist would say), may become their *hybernaculum*, and afford them a ready and obvious retreat?[1]

[1] In this letter we have the strongest evidence that Gilbert White could not rid himself of the idea that it was possible for Swallows to hibernate in this country. The discovery, if possible, could not have escaped the Selborne naturalist, for either he, or some of his neighbours, would have unearthed a sleeping swallow in the course of his long life. No practical evidence of hibernation ever came to his hand, and he would probably have cast aside the theory once and for all, had he known that after their absence from England, the swallows *moult*, a function not likely to be performed with a chance of survival in a "hybernaculum," either above or beneath water.—[R. B. S.]

We now begin to expect our vernal migration of ring-ousels every week. Persons worthy of credit assure me that ring-ousels were seen at *Christmas* 1770 in the forest of Bere, on the southern verge of this county. Hence we may conclude that their migrations are only internal, and not extended to the continent southward, if they do at first come at all from the northern parts of this island only, and not from the north of *Europe*. Come from whence they will, it is plain, from the fearless disregard that they show for men or guns, that they have been little accustomed to places of much resort. Navigators mention that in the *Isle of Ascension*, and other such desolate districts, birds[1] are so little acquainted with the human form that they settle on men's shoulders; and have no more dread of a sailor than they would have of a goat that was grazing. A young man at *Lewes*, in *Sussex*, assured me that about seven years ago ring-ousels abounded so about that town in the autumn that he killed sixteen himself in one afternoon; he added further, that some had appeared since in every autumn; but he could not find that any had been observed before the season in which he shot so many. I myself have found these birds in little parties in the autumn cantoned all along the *Sussex* downs, wherever there were shrubs and bushes, from *Chichester* to *Lewes;* particularly in the autumn of 1770.

[Please to present my humble respects to M^r. Barrington; & M^r. Lightfoot to whom I return thanks for his last letter. Hoping to hear from you soon, I remain with

great esteem,
Your most humble servant,
GIL: WHITE.]

[1] The Sooty Tern (*Sterna fuliginosa*).—[R. B. S.]

ADDENDUM

SELBORNE, *March 16th*, 1773.[1]

[DEAR SIR,—I am sorry our affairs do not coincide a little better, so as to give us an opportunity of meeting in London. According to our present plan, my Brother & I propose to be there about the middle of April, at wch time it is to be feared you will be return'd into the Country. I am obliged to you for your kind offer concerning the Drawings, but cannot yet positively say which in particular I would wish to have copied. I must first consult some of my friends on that head, & shd be glad of your opinion in the choice of them. Linnæus says the fish wch I am doubtful whether to call *Perca*, or *Zeus*, is actually a *New Genus!* I have a good specimen wch you shall see; & it will be better to draw from that than my rude Outline. I shall now be glad to collect *all* my scatter'd remarks on the Nat: Hist: of Gibraltar, & shall beg the favour of seeing, once more, those Anecdotes wch I have sent you from time to time, especially those that relate to the fishes, & birds. I beg your thoughts on the *Lepidopus*. It certainly is what Gouan speaks of, tho' very different in some respects. I shall have a great variety of new Insects; but I fear many more are lost by being too hastily handled & examined. On examining the *biggest* of my *short-bill'd Andalusian Larks*, & comparing it with the British Larks here, I find it to be the real & genuine Sky lark, *Al. arvensis*. However I hope it's past all doubt that I have still *two new Larks*.

[1] This interesting letter of John White's occurs among the Pennant Letters in the British Museum, and does not appear to have been previously published.—[R. B. S.]

What think you of *Gasterost. Saltatrix*, as I have ventur'd to call it? Yet I fear it cannot be positively pronounc'd that species. I would like to have Cuts of all my *new* Subjects, provided they were well executed. But I observe that all the Artists, who succeed pretty well in Quadrup. & Fishes, & Insects, are still very defective in Birds. Have you & M. de Buffon adjusted matters concerning the Scops? I have a pretty specimen, but fear the Engravers will murder the delicate pencilling of that Bird.

I should be happy to have some days' conference with you on the more rare of our Subjects, before I finish my Fauna. I am not so forward as I c^d^ wish for want of having all my Specimens & Materials about me. If you have any Papers or Memorials that you can spare, w^ch^ may contribute to my farther information, please to leave them at my Brother's in Fleet-street. I hope to be at Blackburn the beginning of May.

I am, D^r^ Sir, with much esteem
Your most obed^t^ serv^t^
J. WHITE.

In your list of Animals of Southern Europe w^ch^ you have got drawn, I cannot precisely distinguish w^ch^ of them are mine, but shall be glad if you w^d^ put a mark on those w^ch^ you had from me.]

LETTER XXXIX[1]

TO THE SAME

SELBORNE, *Nov. 9th*, 1773.

DEAR SIR,—As you desire me to send you such observations as may occur, I take the liberty of making the following remarks, that you may, according as you think me right or wrong, admit or reject what I here advance, in your intended new edition of the *British Zoology*.[2]

The osprey was shot about a year ago at *Frinsham*[3] *Pond*, a great lake, at about six miles from hence, while it was sitting on the handle of a plough and devouring a fish : it used to precipitate itself into the water, and so take its prey by surprise.

A great ash-coloured butcher-bird[4] was shot last winter in *Tisted-park*, and a red-backed butcher-bird at *Selborne:* they are *rarœ aves* in this county.

Crows[5] go in pairs all the year round.

Cornish choughs[6] abound, and breed on *Beachy-head*, and on all the cliffs of the *Sussex* coast.

The common wild-pigeon, or stock-dove,[7] is a bird of passage in the south of *England*, seldom appearing till towards the end of *November;* is usually the latest winter-bird of passage. Before our beechen woods were so much destroyed we had myriads of them, reaching

[1] Although Pennant occasionally mentions Gilbert White's name as that of one of his correspondents, he does not give the latter the credit for many of his field-notes, though be often adopts them, and uses White's own words without a word of acknowledgment.—[R. B. S.]

[2] *British Zoology*, vol. i. p. 128.—[G. W.]

[3] Frensham.—[R. B. S.]

[4] *British Zoology*, vol. i. p. 161.—[G. W.]

[5] *Ibid.*, p. 167.—[G. W.]

[6] *Ibid.*, p. 198.—[G. W.]

[7] *Ibid.*, p. 216.—[G. W.]

Chough.

¼ Life size.

in strings for a mile together as they went out in a morning to feed. They leave us early in spring: where do they breed?

The people of *Hampshire* and *Sussex* call the missel-bird[1] the storm-cock, because it sings early in the spring in blowing showery weather; its song often commences with the year: with us it builds much in orchards.

A gentleman assures me he has taken the nests of ring-ousels[2] on *Dartmoor*: they build in banks on the sides of streams.

Titlarks[3] not only sing sweetly as they sit on trees, but also as they play and toy about on the wing; and particularly while they are descending, and sometimes when they stand on the ground.[4]

Adanson's testimony[5] seems to me to be a very poor evidence that *European* swallows migrate during our winter to *Senegal*: he does not talk at all like an ornithologist; and probably saw only the swallows of that country, which I know build within Governor *O'Hara's* hall against the roof.[6] Had he known *European* swallows would he not have mentioned the species?

The *house-swallow* washes by dropping into the water as it flies: this species appears commonly about a week before the *house-martin*, and about ten or twelve days before the *swift*.

In 1772 there were young house-martins[7] in their nest till October the twenty-third.

The *swift*[8] appears about ten or twelve days later than the *house-swallow*: viz., about the twenty-fourth or twenty-sixth of April.

[1] *British Zoology*, vol. i. p. 224.—[G. W.] [2] *Ibid.*, p. 229.—[G. W.]

[3] *Ibid.*, p. 207.—[G. W.]

[4] Gilbert White must here be partly alluding to the Tree-Pipit (*Anthus trivialis*).—[R. B. S.]

[5] *British Zoology*, vol. i. p. 242.—[G. W.]

[6] This would be the swallow of Senegambia (*Hirundo lucida*), which is resident there. Our Swallow (*H. rustica*) only occurs in West Africa during our winter months.—[R. B. S.]

[7] *British Zoology*, vol. i. p. 244.—[G. W.] [8] *Ibid.*, p. 245.—[G. W.]

Whin-chats and *stone-chatters*[1] stay with us the whole year.

Some wheat-ears continue with us the winter through.[2]

Wagtails, all sorts, remain with us all the winter.[3]

Bullfinches,[4] when fed on hempseed, often become wholly black.

We have vast flocks of *female* chaffinches[5] all the winter, with hardly any males among them.

When you say that in breeding-time the cock-snipes[6] make a bleating noise, and I a drumming (perhaps I should have rather said an humming), I suspect we mean the same thing. However, while they are playing about on the wing they certainly make a loud piping with their mouths: but whether that bleating or humming is ventriloquous, or proceeds from the motion of their wings, I cannot say; but this I know, that when this noise happens the bird is always descending, and his wings are violently agitated.

Soon after the lapwings[7] have done breeding they

[1] *British Zoology*, vol. i. pp. 270, 271.—[G. W.] The Whin-chat (*Pratincola rubetra*) is never found in England in winter, being a thorough migrant. The Stone-chat (*P. rubicola*) is a partial migrant. Many remain during the winter in the southern counties, and I saw several on the hedges in the Alton Road in November 1899, during my visits to Selborne in that year.—[R. B. S.]

[2] *British Zoology*, p. 269.—[G. W.] See Letter XIII and note.—[R. B. S.]

[3] *British Zoology*, vol. i. p. 299.—[G. W.] See (*antea*) note, p. 52.—[R. B. S.]

[4] *British Zoology*, vol. i. p. 300.—[G. W.]

[5] *British Zoology*, p. 306.—[G. W.] See (*antea*) note, p. 51. Mr. Harting is quite right. In order to settle this question, which I fancied I had solved in the "Catalogue of Birds," I have had numbers of Chaffinches sent to me by Mr. Brazenor of Brighton during the present winter of 1899–1900. The instructions given by me to the bird-catchers on the Downs were to send the results of various catches in the nets. I have received in every case numbers of male and female chaffinches caught at the same "pull" of the net, the females perhaps slightly predominating. On every occasion the sexual organs have been examined at the Natural History Museum by Mr. Pycraft, Mr. Ogilvie Grant, and myself, and among the females there has never been one instance of a young male in the plumage of the hen. My previous statement (p. 51, note), that the male assumes the full plumage at its first autumn moult, has been fully confirmed by these recent observations.—[R. B. S.]

[6] *British Zoology*, vol. i. p. 358.—[G. W.]

[7] *Ibid.*, p. 360.—[G. W.]

congregate, and, leaving the moors and marshes, betake themselves to downs and sheep-walks.

Two years ago[1] last spring the little auk was found alive and unhurt, but fluttering and unable to rise, in a lane a few miles from *Alresford*, where there is a great lake: it was kept a while, but died.[2]

I saw young teals[3] taken alive in the ponds of *Wolmer-forest* in the beginning of *July* last, along with flappers, or young wild-ducks.

Speaking of the *swift*,[4] that page says "*it's drink the dew*;" whereas it should be "it drinks on the wing;" for all the swallow kind sip their water as they sweep over the face of pools or rivers: like Virgil's bees, they drink flying; "*flumina summa libant.*" In this method of drinking perhaps this genus may be peculiar.

Of the sedge-bird[5] be pleased to say it sings most part of the night; its notes are hurrying, but not unpleasing, and imitative of several birds; as the sparrow, swallow, skylark. When it happens to be silent in the night, by throwing a stone or clod into the bushes where it sits you immediately set it a-singing; or in other words, though it slumbers sometimes, yet as soon as it is awakened it reassumes its song.

[1] *British Zoology*, vol. i. p. 409.—[G. W.]

[2] The Little Auk (*Alle alle* of modern writers).—[R. B. S.]

[3] *British Zoology*, vol. i. p. 475.—[G. W.] See Letter XV to Barrington.—[R. B. S.]

[4] *British Zoology*, vol. ii. p. 15.—[G. W.]

[5] *Ibid.*, p. 16.—[G. W.]

LETTER XL

TO THE SAME

SELBORNE, *Sept. 2nd*, 1774.

DEAR SIR,—Before your letter arrived, and of my own accord, I had been remarking and comparing the tails of the male and female swallow, and this ere any young broods appeared; so that there was no danger of confounding the dams with their *pulli:* and besides, as they were then always in pairs, and busied in the employ of nidification, there could be no room for mistaking the sexes, nor the individuals of different chimneys the one for the other. From all my observations, it constantly appeared that each sex has the long feathers in its tail that give it that forked shape; with this difference, that they are longer in the tail of the male than in that of the female.

Nightingales, when their young first come abroad, and are helpless, make a plaintive and a jarring noise; and also a snapping or cracking, pursuing people along the hedges as they walk: these last sounds seem intended for menace and defiance.[1]

The grasshopper-lark chirps all night in the height of summer.[2]

Swans turn white the second year, and breed the third.

Weasels prey on moles, as appears by their being sometimes caught in mole-traps.

Sparrow-hawks sometimes breed in old crows' nests,[3] and the kestril in churches and ruins.

[1] This is the alarm-note of most of the Warblers.—[R. B. S.]

[2] *Salicaria locustella*, see Letter XVI (*antea*, p. 63).—[R. B. S.]

[3] So do Kestrels, which, more often than not, appropriate the old nest of some other bird, whereas Sparrow-hawks as a rule build their own nest.—[R. B. S.]

There are supposed to be two sorts of eels in the island of *Ely*. The threads sometimes discovered in eels are perhaps their young: the generation of eels is very dark and mysterious.[1]

Hen-harriers breed on the ground, and seem never to settle on trees.

When redstarts shake their tails they move them horizontally, as dogs do when they fawn: the tail of a wagtail, when in motion, bobs up and down like that of a jaded horse.

Hedge-sparrows have a remarkable flirt with their wings in breeding-time; as soon as frosty mornings come they make a very piping plaintive noise.

Many birds which become silent about *Midsummer* reassume their notes again in *September*; as the thrush, blackbird, woodlark, willow-wren, &c.; hence *August* is by much the most mute month, the spring, summer, and autumn through. Are birds induced to sing again because the temperament of autumn resembles that of spring?

Linnæus ranges plants geographically; palms inhabit the tropics, grasses the temperate zones, and mosses and lichens the polar circles; no doubt animals may be classed in the same manner with propriety.[2]

House-sparrows build under eaves in the spring; as the weather becomes hotter they get out for coolness, and nest in plum-trees and apple-trees. These birds have been known sometimes to build in rooks' nests, and sometimes in the forks of boughs under rooks' nests.

As my neighbour was housing a rick he observed that

[1] Three species of British eels have now been clearly made out: two very distinct by the form of the head, in the one narrow, in the other broad, and consequently have been named sharp and broad-nosed eels. The third is of intermediate form, and called the *snig*. Ely was famous for its eels, and is said to have derived its name from the circumstance of its rents being formerly paid in eels. The "threads" would be intestinal worms, perhaps *Filariæ*.—Eels are oviparous and generate like most other fishes, having bony skeletons.—[W. J.]

[2] Nothing in the record of Gilbert White's observations is more striking than his insight into Biological problems, worked out by his successors when the material for study became more plentiful. The above sentence was prophetic. —[R. B. S.]

his dogs devoured all the little red mice that they could catch, but rejected the common mice; and that his cats ate the common mice, refusing the red.

Red-breasts sing all through the spring, summer, and autumn. The reason that they are called autumn songsters is, because in the two first seasons their voices are drowned and lost in the general chorus; in the latter their song becomes distinguishable. Many songsters of the autumn seem to be the young cock red-breasts of that year: notwithstanding the prejudices in their favour, they do much mischief in gardens to the summer-fruits.

The titmouse, which early in *February* begins to make two quaint notes, like the whetting of a saw, is the marsh titmouse: the great titmouse sings with three cheerful joyous notes, and begins about the same time.

Wrens sing all the winter through, frost excepted.

House-martins came remarkably late this year both in *Hampshire* and *Devonshire:* is this circumstance for or against either hiding or migration?

Most birds drink sipping at intervals; but pigeons take a long continued draught, like quadrupeds.

Notwithstanding what I have said in a former letter, no grey crows were ever known to breed on *Dartmoor;* it was my mistake.

The appearance and flying of the *Scarabæus solstitialis*, or fern-chafer, commence with the month of July, and cease about the end of it. These scarabs are the constant food of *caprimulgi*, or fern-owls, through that period. They abound on the chalky downs and in some sandy districts, but not in the clays.

In the garden of the *Black-bear* inn in the town of *Reading* is a stream or canal running under the stables and out into the fields on the other side of the road: in this water are many carps, which lie rolling about in sight, being fed by travellers, who amuse themselves by tossing them bread; but as soon as the weather grows at all severe these fishes are no longer seen, because they retire under the stables, where they remain till the return

of spring. Do they lie in a torpid state? if they do not, how are they supported?

The note of the white-throat, which is continually repeated, and often attended with odd gesticulations on the wing, is harsh and displeasing. These birds seem of a pugnacious disposition; for they sing with an erected crest and attitudes of rivalry and defiance; are shy and wild in breeding-time, avoiding neighbourhoods, and haunting lonely lanes and commons; nay even the very tops of the *Sussex-downs*, where there are bushes and covert; but in *July* and *August* they bring their broods into gardens and orchards, and make great havoc among the summer-fruits.[1]

The black-cap has in common a full, sweet, deep, loud, and wild pipe; yet that strain is of short continuance, and his motions are desultory; but when that bird sits calmly and engages in song in earnest, he pours forth very sweet, but inward melody, and expresses great variety of soft and gentle modulations, superior perhaps to those of any of our warblers, the nightingale excepted.

Black-caps mostly haunt orchards and gardens; while they warble their throats are wonderfully distended.

The song of the redstart is superior, though somewhat like that of the white-throat; some birds have a few more notes than others. Sitting very placidly on the top of a tall tree in a village, the cock sings from morning to night: he affects neighbourhoods, and avoids solitude, and loves to build in orchards and about houses; with us he perches on the vane of a tall maypole.

The fly-catcher is of all our summer birds the most mute and the most familiar; it also appears the last of any. It builds in a vine, or a sweetbriar, against the wall of a

[1] The whole of this letter appears to have been composed for the published work, as the only portion of it which was ever addressed to Pennant is the above account of the White-throat. This is to be found in White's original letter to Pennant, dated July 8, 1773, the remainder of which deals with the Barn and Brown Owls, and appears as the sixteenth Letter to Barrington in the completed work.

house, or in the hole of a wall, or on the end of a beam or plate, and often close to the post of a door where people are going in and out all day long. This bird does not make the least pretension to song, but uses a little inward wailing note when it thinks its young in danger from cats or other annoyances; it breeds but once, and retires early.[1]

Selborne parish alone can and has exhibited at times more than half the birds that are ever seen in all *Sweden;* the former has produced more than one hundred and twenty species, the latter only two hundred and twenty-one. Let me add also that it has shown near half the species that were ever known in *Great-Britain.*[2]

On a retrospect, I observe that my long letter carries with it a quaint and magisterial air, and is very sententious; but when I recollect that you requested stricture and anecdote, I hope you will pardon the didactic manner for the sake of the information it may happen to contain.

[1] Professor Bell gives an instance (ed. "Selborne," vol. i. p. 103 *note*) of the extreme tameness of a pair of Flycatchers at the "Wakes," when some young birds were blown out of the nest, placed in a cage "outside the kitchen-window," and brought up by the parents till they were able to fly. He also comments on the constant return of the Flycatchers to their breeding-place, and quotes a letter written to him, by my great-aunt, the Baroness de Sternberg, from her house at Windermere, recording the nesting of Flycatchers in a corner of her greenhouse for five years in succession.—[R. B. S.]

[2] Sweden 221, Great Britain 252 species.—[G. W.]

The latest edition of Mr. Howard Saunders's "Manual" gives the number of species in the British List as 384.—[R. B. S.]

Great Tit.

Blue Tit. Coal Tit.

Life size

LETTER XLI[1]

TO THE SAME

It is matter of curious inquiry to trace out how those species of soft-billed birds that continue with us the winter through, subsist during the dead months. The imbecility of birds seems not to be the only reason why they shun the rigour of our winters; for the robust *wry-neck* (so much resembling the hardy race of *wood-peckers*) migrates, while the feeble little *golden-crowned wren*, that shadow of a bird, braves our severest frosts without availing himself of houses or villages, to which most of our winter birds crowd in distressful seasons, while this keeps aloof in fields and woods; but perhaps this may be the reason why they may often perish, and why they are almost as rare as any bird we know.

I have no reason to doubt but that the soft-billed birds, which winter with us, subsist chiefly on insects in their *aurelia* state. All the species of *wagtails* in severe weather haunt shallow streams near their spring-heads, where they never freeze; and, by wading, pick out the aurelias of the genus of *Phryganeæ*,[2] &c.

Hedge-sparrows frequent sinks and gutters in hard weather, where they pick up crumbs and other sweepings: and in mild weather they procure worms, which are stirring every month in the year, as any one may see

[1] This and the following letters are mostly undated, and never really formed part of the Pennant correspondence; they were added to complete the work when Gilbert White had decided on publication.—[R. B. S.]

[2] See Derham's "Physico-theology," p. 235 [G. W.], and note, Letter XIII, *antea*, p. 39.—[R. B. S.]

that will only be at the trouble of taking a candle to a grass-plot on any mild winter's night. Red-breasts and wrens in the winter haunt out-houses, stables, and barns, where they find spiders and flies that have laid themselves up during the cold season. But the grand support of the soft-billed birds in winter is that infinite profusion of *aureliæ* of the *Lepidoptera ordo*, which is fastened to the twigs of trees and their trunks; to the pales and walls of gardens and buildings; and is found in every cranny and cleft of rock or rubbish, and even in the ground itself.

Every species of titmouse winters with us; they have what I call a kind of intermediate bill between the hard and the soft, between the *Linnæan* genera of *Fringilla* and *Motacilla*. One species alone spends its whole time in the woods and fields, never retreating for succour in the severest seasons to houses and neighbourhoods; and that is the delicate long-tailed titmouse,[1] which is almost as minute as the golden-crowned wren; but the blue titmouse or nun (*parus cæruleus*), the cole-mouse (*parus ater*), the great black-headed titmouse (*fringillago*), and the marsh titmouse (*parus palustris*), all resort at times to buildings, and in hard weather particularly. The great titmouse, driven by stress of weather, much frequents houses; and, in deep snows, I have seen this bird, while it hung with its back downwards (to my no small delight and admiration), draw straws lengthwise from out the eaves of thatched houses, in order to pull out the flies that were concealed between them, and that in such numbers that they quite defaced the thatch, and gave it a ragged appearance.

The blue *titmouse*, or *nun*, is a great frequenter of houses, and a general devourer. Besides insects, it is very fond of flesh; for it frequently picks bones on dunghills: it is a vast admirer of suet, and haunts butchers' shops. When a boy, I have known twenty in a morning caught

[1] *Ægithalus vagans* (Leach).—[R. B. S.]

"IT WILL BE . . . WELL ENTERTAINED WITH THE SEEDS ON THE HEAD OF A SUNFLOWER"

with snap mouse-traps, baited with tallow or suet. It will also pick holes in apples left on the ground, and be well entertained with the seeds on the head of a sunflower. The blue, marsh, and great titmice will, in very severe weather, carry away barley and oat-straws from the sides of ricks.

How the *wheat-ear* and *whin-chat* support themselves in winter cannot be so easily ascertained, since they spend their time on wild heaths and warrens; the former especially, where there are stone quarries: most probably it is that their maintenance arises from the *aureliæ* of the *Lepidoptera ordo*, which furnish them with a plentiful table in the wilderness.[1]

I am, &c.

[1] See Letter XIII, and note (*antea*, p. 52).—[R. B. S.]

LETTER XLII

TO THE SAME

SELBORNE, *March 9th*, 1774.

DEAR SIR,—Some future *faunist*, a man of fortune, will, I hope, extend his visits to the kingdom of *Ireland*; a new field and a country little known to the naturalist.[1] He will not, it is to be wished, undertake that tour unaccompanied by a botanist, because the mountains have scarcely been sufficiently examined; and the southerly counties of so mild an island may possibly afford some plants little to be expected within the *British* dominions. A person of a thinking turn of mind will draw many just remarks from the modern improvements of that country, both in arts and agriculture, where premiums obtained long before they were heard of with us. The manners of the wild natives, their superstitions, their prejudices, their sordid way of life, will extort from him many useful reflections. He should also take with him an able draughtsman; for he must by no means pass over the noble castles and seats, the extensive and picturesque lakes and waterfalls, and the lofty stupendous mountains, so little known, and so engaging to the imagination when described and exhibited in a lively manner; such a work would be well received.[2]

As I have seen no modern map of *Scotland*, I cannot

[1] Besides the four volumes on the "Birds of Ireland," published by the late Wm. Thompson, many excellent memoirs have been lately published by Mr. R. J. Ussher, Mr. Barrett-Hamilton, and other good observers in that country. —[R. B. S.]

[2] The above sentence is modified from a portion of a letter written to Pennant on the 19th of March 1772. See also note to Bell's edition (vol. i. p. 106).—[R. B. S.]

pretend to say how accurate or particular any such may be; but this I know, that the best old maps of that kingdom are very defective.

The great obvious defect that I have remarked in all maps of *Scotland* that have fallen in my way is, a want of a *coloured line*, or *stroke*, that shall exactly define the just limits of that district called *The Highlands*. Moreover, all the great avenues to that mountainous and romantic country want to be well distinguished. The military roads formed by General *Wade* are so great and Roman-like an undertaking that they well merit attention. My old map, *Moll's* Map, takes notice of *Fort William*, but could not mention the other forts that have been erected long since; therefore a good representation of the chain of forts should not be omitted.

The celebrated zigzag up the *Coryarich* must not be passed over. *Moll* takes notice of *Hamilton* and *Drumlanrig*, and such capital houses; but a new survey, no doubt, should represent every seat and castle remarkable for any great event, or celebrated for its paintings, &c. Lord *Breadalbane's* seat and beautiful *policy* are too curious and extraordinary to be omitted.

The seat of the Earl of *Eglintoun*, near *Glasgow*, is worthy of notice. The pine plantations of that nobleman are very grand and extensive indeed.

I am, &c.

LETTER XLIII

TO THE SAME

A pair of *honey-buzzards, buteo apivorus, sive vespivorus Raii,* built them a large shallow nest, composed of twigs and lined with dead beechen leaves, upon a tall slender beech near the middle of *Selborne-hanger,* in the summer of 1780.[1] In the middle of the month of *June* a bold boy climbed this tree, though standing on so steep and dizzy a situation, and brought down an egg, the only one in the nest, which had been sat on for some time, and contained the embryo of a young bird. The egg was smaller, and not so round as those of the common buzzard; was dotted at each end with small red spots, and surrounded in the middle with a broad bloody zone.

The hen-bird was shot, and answered exactly to Mr. *Ray's* description of that species; had a black *cere,* short thick legs, and a long tail. When on the wing this species may be easily distinguished from the *common buzzard* by its hawk-like appearance, small head, wings not so blunt, and longer tail. This specimen contained in its craw some limbs of frogs and many grey snails without shells. The *irides* of the eyes of this bird were of a beautiful bright yellow colour.

About the tenth of *July* in the same summer a pair of *sparrow-hawks* bred in an old crow's nest on a low beech in the same hanger; and as their brood, which was numerous, began to grow up, became so daring and

[1] The "Honey-Buzzard" (*Pernis apivorus*) no longer breeds regularly in England, but it is not so many years ago that nests used to be taken in the New Forest.—[R. B. S.]

Honey-Buzzard.

1/6 Life size.

ravenous, that they were a terror to all the dames in the village that had chickens or ducklings under their care. A boy climbed the tree, and found the young so fledged that they all escaped from him; but discovered that a good house had been kept: the larder was well stored with provisions; for he brought down a young blackbird, jay, and house-martin, all clean picked, and some half devoured. The old birds had been observed to make sad havoc for some days among the new-flown swallows and martins, which, being but lately out of their nests, had not acquired those powers and command of wing that enable them, when more mature, to set such enemies at defiance.

LETTER XLIV

TO THE SAME

SELBORNE, *Nov. 30th*, 1780.

DEAR SIR,—Every incident that occasions a renewal of our correspondence will ever be pleasing and agreeable to me.

As to the wild wood-pigeon, the *ænas*, or *vinago*, of *Ray*, I am much of your mind; and see no reason for making it the origin of the common *house-dove:* but suppose those that have advanced that opinion may have been misled by another appellation, often given to the *ænas*, which is that of *stock-dove*.

Unless the stock-dove in the winter varies greatly in manners from itself in summer, no species seems more unlikely to be domesticated, and to make an *house-dove*. We very rarely see the latter settle on trees at all, nor does it ever haunt the woods: but the former as long as it stays with us, from *November* perhaps to *February*, lives the same wild life with the *ring-dove*, *palumbus torquatus;* frequents coppices and groves, supports itself chiefly by mast, and delights to roost in the tallest beeches. Could it be known in what manner stock-doves build, the doubt would be settled with me at once, provided they construct their nests on trees, like the *ring-dove*, as I much suspect they do.[1]

You received, you say, last spring a *stock-dove* from *Sussex;* and are informed that they sometimes breed in that country. But why did not your correspondent determine the place of its nidification, whether on rocks, cliffs,

[1] See Letter XXXIX (*antea*, p. 166).—[R. B. S.]

or trees? If he was not an adroit ornithologist I should doubt the fact, because people with us perpetually confound the *stock-dove* with the *ring-dove*.[1]

For my own part, I readily concur with you in supposing that house-doves are derived from the *small blue rock-pigeon*, for many reasons. In the first place the wild stock-dove is manifestly larger than the common house-dove, against the usual rule of domestication, which generally enlarges the breed. Again, those two remarkable *black spots* on the remiges of each wing of the stock-dove, which are so characteristic of the species, would not, one should think, be totally lost by its being reclaimed; but would often break out among its descendants. But what is worth an hundred arguments is, the instance you give in Sir *Roger Mostyn's* house-doves in *Cærnarvonshire*; which, though tempted by plenty of food and gentle treatment, can never be prevailed on to inhabit their cote for any time; but, as soon as they begin to breed, betake themselves to the fastnesses of *Ormshead*, and deposit their young in safety amidst the inaccessible caverns and precipices of that stupendous promontory.[2]

"Naturam expellas furcâ . . . tamen usque recurret."

I have consulted a sportsman, now in his seventy-eighth year, who tells me that fifty or sixty years back, when the beechen woods were much more extensive than at present, the number of wood-pigeons was astonishing; that he has often killed near twenty in a day: and that with a long wild-fowl piece he has shot seven or eight at a time on the wing as they came wheeling over his head: he moreover

[1] I saw plenty of Stock-doves (*Columba ænas*) in the beeches of the Long Lythe at Selborne in October and November of this year (1899). They seemed to be more numerous than the Wood-pigeon.—[R. B. S.]

[2] It is the white-rumped pigeon, or rock-dove, *Columba livia*, which is the original stock of our dove-cots, and the natural abode of this species is in caves and rocky precipices on the sea-coast. Although White remarks that the domestic pigeon never settles on trees, such is sometimes the case; Mr. Eyton has observed this, and we have frequently seen it; at the same time it is by no means the general habit.—[W. J.]

adds, which I was not aware of, that often there were among them little parties of small blue doves, *which he* calls *rockiers*. The food of these numberless emigrants was beech-mast and some acorns ; and particularly barley, which they collected in the stubbles. But of late years, since the vast increase of turnips, that vegetable has furnished a great part of their support in hard weather ; and the holes they pick in these roots greatly damage the crop. From this food their flesh has contracted a rancidness which occasions them to be rejected by nicer judges of eating, who thought them before a delicate dish. They were shot not only as they were feeding in the fields, and especially in snowy weather, but also at the close of the evening, by men who lay in ambush among the woods and groves to kill them as they came in to roost.[1] These are the principal circumstances relating to this wonderful *internal* migration, which with us takes place towards the end of *November*, and ceases early in the spring. Last winter we had in *Selborne* high wood about an hundred of these doves ; but in former times the flocks were so vast, not only with us but all the district round, that on mornings and evenings they traversed the air, like rooks, in strings, reaching for a mile together. When they thus rendezvoused here by thousands, if they happened to be suddenly roused from their roost-trees on an evening,

> " Their rising all at once was like the sound
> Of thunder heard remote."——

It will by no means be foreign to the present purpose to add, that I had a relation in this neighbourhood who made it a practice, for a time, whenever he could procure the eggs of a *ring-dove*, to place them under a pair of doves that were sitting in his own pigeon-house ; hoping thereby, if he could bring about a coalition, to enlarge his breed, and teach his own doves to beat out into the

[1] Some old sportsmen say that the main part of these flocks used to withdraw as soon as the heavy *Christmas* frosts were over.—[G. W.]

woods and to support themselves by mast; the plan was plausible, but something always interrupted the success; for though the birds were usually hatched, and sometimes grew to half their size, yet none ever arrived at maturity. I myself have seen these foundlings in their nest displaying a strange ferocity of nature, so as scarcely to bear to be looked at, and snapping with their bills by way of menace. In short, they always died, perhaps for want of proper sustenance: but the owner thought that by their fierce and wild demeanour they frighted their foster-mothers, and so were starved.

Virgil, as a familiar occurrence, by way of simile, describes a dove haunting the cavern of a rock in such engaging numbers, that I cannot refrain from quoting the passage: and *John Dryden* has rendered it so happily in our language, that without further excuse I shall add his translation also:—

"Qualis speluncâ subitò commota Columba,
Cui domus, et dulces latebroso in pumice nidi,
Fertur in arva volans, plausumque exterrita pennis
Dat tecto ingentem—mox aere lapsa quieto,
Radit iter liquidum, celeres neque commovet alas."

"As when a dove her rocky hold forsakes,
Rous'd, in a fright her sounding wings she shakes;
The cavern rings with clattering:—out she flies,
And leaves her callow care, and cleaves the skies;
At first she flutters:—but at length she springs
To smoother flight, and shoots upon her wings."

I am, &c.

A GARDEN KALENDAR

EDITED BY

R. BOWDLER SHARPE, LL.D., F.L.S.

WITH AN INTRODUCTION BY

THE VERY REV. S. REYNOLDS HOLE, D.D.

DEAN OF ROCHESTER

The right time by the sun.

The Rev. Gilbert White at his sundial

INTRODUCTION

WE visit the homes and wander amid the haunts of famous men with whom it has been our privilege to associate as friends, "whom we have loved long since, and lost awhile," with pathetic alternations of joy and grief, of sweet remembrance and of sad regret. As the old surroundings suggest to the imagination the living presence, the tone of the voice, and the happy hours which we have spent together, they constrain us at the same time to mourn for the tender grace of a day that is dead, and we pass and return, as in the streets of an Italian city, from the chill shadow to the hot glare of sunshine, from gloom to mirth. I go to the house of Charles Dickens at Gadshill (the present owner being always my kind host) and in the rooms in which he lived, and on the spot where he suddenly sank to die, in the rose garden designed by his friend Sir Joseph Paxton, or in the châlet which was given to him by Fechter, in which he wrote many of his wonderful books, and which was bought by the late Lord Darnley, and is now in the grounds at Cobham, I have a vision of bright smiles on his handsome face, and words which he spoke to me, wise and witty, seem to echo in mine ears.

I stand by the graves of Thackeray, Leech, and Millais,

> "And a flood of thoughts comes gushing,
> And fills mine eyes with tears."

I go to the tomb of Archbishop Benson in the cathedral at Canterbury, and no pilgrim approaches a shrine with a

more reverent love; or I gaze on the marble effigy of Bishop Christopher Wordsworth at Lincoln, and remember the earnest words which were said to me by Bishop (afterwards Archbishop) Magee, "I never left his presence without feeling that he had done me good."

Less vividly, but always with a strong emotion, our sympathies and admirations are quickened when we enter the abodes which were occupied long ago by men of renown and honour. We remember with a new interest the records of their achievements, the benefits which they have bestowed as churchmen, statesmen, soldiers, sailors, lawyers, philosophers, physicians, authors, and artists, upon their country and their fellow-men. To illustrate from my own experience, I recall my visits to the little church and parsonage at Bemerton, Pope's villa at Twickenham, the home of Horace Walpole at Strawberry Hill, of Sir Walter Scott at Abbotsford, of Lord Byron at Newstead, and, on the other side of the Atlantic, of Washington Irving, Fenimore Cooper, Longfellow, Lowell, Bryant, and Whittier. On all these happy occasions I have experienced a return of first love, *redintegratio amoris*, a "time of refreshing," a kindling of the fire that smouldered, an awaking of the zeal which slept. The intense feelings of pleasure and of pain, of terror and of mirth, of tender pity and of righteous wrath, which first absorbed our thoughts in day-time and our dreams at night; the reverence which was so solemn and sincere; the aspirations which were so high and so pure; all the impressions made upon us, real or romantic, false or true, brief or steadfast, by the books of our boyhood and youth, are in the mind and in the heart once more; the fears we felt, alone in the darkness, of ghosts and robbers after perusal of Irving's "Tales of a Traveller," the tears we shed for the faithful hound in the "Talisman," our breathless delight in "Ivanhoe," and in the musical rhythm of "Marmion" and "The Lady of the Lake," our secret intention when we read the "Corsair" to follow the

vocation of a pirate, until it was shamed and suppressed by Longfellow's "Excelsior," or we learned from Herbert or from Keble the supreme ambition.

In some places we are reminded not only of the standard works of great writers, but of other associations which seem to bring us into closer communion with them. We gardeners, for example, rejoice at Twickenham and at Strawberry Hill in the thought that Pope and Walpole were enthusiastic brethren of our craft; and while we admire the "Essay on Gardening" more than the "Essay on Man," we extol the author of the latter as the more practical artist of the two. They were united as champions and pioneers of the natural or English style. They were alike earnest in denouncing the monotonous formalities and repetitions, the ponderous walls, balustrades, and stairs, the feeble waterspouts, the mutilated shrubs, which still disfigure too many of our modern gardens.

I am approaching my main object by a circuitous route, resembling "the Drive" at some pretentious villa, which meanders, like a river flowing to the sea, through small clumps of shrubberies to the door of the house, and is designed to impress the visitor, "to astonish the Browns," with erroneous ideas of space, because that same sense of a fresh interest and a new proximity, to which I have referred in their connection with personal friendships and local associations, has come to me in my perusal of "A Garden Kalendar" of Gilbert White of Selborne. I seem to follow him among his flowers and fruits, to listen to his words, to rejoice in his success, and to lament his disappointments; and I know that this sympathy will be enjoyed by an innumerable company of gardeners, who have hitherto shared in the great disappointment that this enthusiastic expert, concerning all that is most beautiful and wonderful in the world around us, should have published so little about his garden. I suppose that no book on Natural History has gone through so many editions, but this is the first to include the horticultural diary com-

menced in 1751—a year to be shamefully remembered in England for the drowning of two old women as witches in a horse-pond at Tring, in Hertfordshire.

We have known him long, and loved him much, as a devoted student and impressive teacher of geology, botany, ornithology, entomology, and other branches of natural science; we have admired him as a genial gentleman, philosopher, philanthropist, and something more than these. As a Fellow of his College (Oriel, Oxford) he was compelled by the statutes to take Holy Orders, but this did not imply immediate ministerial work, and he betook himself to his dear old home at Selborne, and to his old happy life of observation, for he seems to have always retained that delight in the beautiful which is innate in all of us amid the marvellous works of God. Valuable College livings were offered to him, but he could not leave the fair ground in which his lot was cast; yet he did not forget the commission nor the power which had been entrusted to him. He held the office of Curate, first in the adjoining parish of Faringdon, and then at Selborne; there is frequent testimony in his writings to his compassion for suffering, and to his interest in the welfare of the poor. He has been always familiar to our imagination in his academical and ecclesiastical costume, "in customary suit of solemn black," for the clergy of that date did not array themselves in straw hats and jackets; we have met him in the woods and in the fields, in the village, in his study with a book or a pen in his hand. At last we find him in his garden! We make obeisance, and, as brethren in the most ancient and honourable of all the crafts, receive the welcome, which we never fail to give to one another.

Gilbert White was a true gardener. The "Kalendar" would by itself be ample evidence, because no one makes regularly a record of events in which they are not deeply interested—even the schoolboy constructs a clumsy almanac

of the time to intervene before the holidays begin, that he may have the daily delight of erasure — but in its perusal we shall find proofs, many and definite, of this reality. *He was his own gardener.* He believed that the golden rule, which prevailed in his day as a condition of success in agriculture, that

> "He who by his plough would thrive,
> Himself must either hold or drive,"

was to be observed in horticulture, and that no man will work quite so well for another as he can work for himself. He knew when, where, and how to perform all garden-work, and when the process was important, he did it, or saw it done. His nephew "John" and "Tull" were his subordinates. He employs labourers two and three at a time to do rough work; "Dame Turner and her girls" come in to weed the walks; but he sows his own choice seed, strikes his own cuttings, prunes his vines, transplants a mulberry tree which he had raised from a layer, makes a bed of aromatic herbs, superintends the grubbing, burning, and planting in new ground added to his garden, the cutting of the alleys, the levelling of his terrace. So he wins for himself the chief joy of a gardener's life as he watches the development from small beginnings and the sure success of his labour. He who grows a conifer from a cone has a delight in his tree which no imported specimen, cost what it may, can bring. Not long ago I was admiring in one of the Midland counties the most beautiful private collection of trees and shrubs which I have ever seen, and when I had repeated to the owner again and again all the laudatory epithets which I could remember, and had continually insisted on his notice of special attractions, as though he had never been there before, or had failed hitherto to discern their merits, he said quietly, "No one can appreciate this quite so dearly as I do, because, beginning fifty years ago, I planted them all."

He exercised the same supervision over all things great

and small, in the vintage of his grapes, in the brewing of his beer, strong, medium, and small (not being one of those who think that, because they are virtuous, there shall be no more cakes and ale), and in the curing and smoking of his hams.

He shared with the wise farmer another grand quality, which has Divine approbation—like the husbandman he had long patience. The adversaries of the gardener are legion, but he fought them bravely. Sometimes we hear complaints that never before has there been such untoward weather, such a congregation of all manner of flies, such a great army of caterpillars, but we find in the "Kalendar" a record of the same plagues and visitations, so that even he who was

> "ever pleased
> With sight of animals enjoying life,
> And felt their happiness augment his own,"

was constrained to apply "more quicklime wherewith to kill the small snails and grubs which continue to annoy the beds"; to save his grapes by bottles and bird-lime from innumerable swarms of wasps; to propitiate the bugs by sowing radishes with his "holy-oaks"; to denounce the fleas which ate his savoys; and to trap the mice which devoured the seed of his Succado Melons. We find him weeping, like Marius over the ruins of Carthage, when his honeysuckles, which but a week ago were the most sweet and lovely object which eye could behold, were defiled and disfigured by the Smother-fly.

No man ever loved birds more dearly or knew more about them than Gilbert White. Selborne parish produced one hundred and twenty species, nearly half of those known in Great Britain at that day, and he was familiar with their habitats and their habits; he knew them by their flight as well as by their colour and shape, and could tell when and where they would come and go (the thatched roofs of the houses at Selborne sheltered many martins' nests); when they would begin and when they would

cease to sing; whether they were strict vegetarians or preferred animal food; when the mistle-thrushes came to the yew-trees; but his admirations were exhausted, and indignation took their place, when the turkeys were mauling his young laurels, when the bullfinches were destroying his fruit-buds, so that he shot a score in one day, and when he "paid Will Dewey for eight dozen of young sparrows."

He suffered from *animal implume* as well as from the feathered tribe. John, a young nephew, scorches and suffocates his cucumbers. The nursery man, Murdoch Middleton, is negligent in executing his orders, supplies him with plants which are wrongly named, pear-trees which are cankered and distempered. The Cantaleupe melon sent to him by the famous Philip Miller, author of the "Gardeners' Dictionary," "though it promised well, was very abominable. The rind was an inch thick and finely embossed, but there was little flesh and less flavour." This fruit, originally imported from Cantaleupe, ten leagues from Rome, was a *specialité* with Gilbert White, not so much as being of all the melons the most palatable, but chiefly because its successful culture was a chief ambition among gardeners, and required all their care and skill. On his return from Oxford or from visits to friends, he hastens to inspect his beds of Cantaleupes, as a young mother rushes to the nursery after absence, or a schoolboy home for the holidays to his pony in the stable. His anxious interest in the culture of this beautiful and refreshing fruit is continually expressed in his "Kalendar," and here is a quaint illustration of his manifold methods to ensure success in an entry on March 15, 1755: "Carried Mr. Garnier's Cantaleupe seed (being but two years old) in my breeches pocket for six or eight weeks."

As for the hallucination that in the merrie old times of our ancestors the sun shone always by day and the moon by night, and that storms and tempests were

relegated to the ocean, we learn from the "Kalendar" that 1757 was one of the wettest years in the memory of man, so that nothing in gardens or a clayey soil grew to any size, and nothing came to bear until five or six weeks later than usual. In 1753 the winter was so severe that most things in the gardens were destroyed; 1755 was a terrible winter for earthquakes, inundations, and "vast" rains with thunder; and in the year following, a violent storm broke down and displaced peas, beans, and flowers, tore the hedges, trees, and shrubs, lashed, banged, and whipped all the green things upon the earth. In after years he writes of furious storms, which battered the vines, of a universal blight, of many people frozen to death in 1762, and of the summer of 1783 as being amazing and portentous, full of horrible phenomena, alarming meteors and tremendous thunderstorms, which affrighted and distressed the different countries of this kingdom with a smoky fog, which prevailed for many weeks, unlike anything known within the memory of man.

Amor omnia vincit, and despite these obstacles, he surrounded himself with things pleasant to the eye and good for food, with those fair flowers which are still to most of us the sweetest and dearest of all. In the middle of February 1762 he writes: "The hepaticas, crocus, and double daisies begin now to make a very agreeable appearance of the first promise of spring," and these were followed, as with us now, by hyacinths, tulips, and daffodils, until it was the "time of roses," and of all the summer flowers. He grew all the vegetables and fruits which are our favourites still; and though in some cases improvements have been made, I should doubt whether we have anything more delicious in peaches than the *Noblesse* on his sunny wall, or anything in pears more resembling that which the rustic described as "a kind o' pear that eats itsen," than his Beurrés, Bergamots, Swan-eggs, and Chaumontels.

He took special pains with his outdoor vines; glass in those days was for Dives only; and we read of constant tacking and trimming, training, thinning, and disbudding. On the 22nd of October 1760 we note with hopeless bewilderment that he transplanted a Muscadine vine, *which John had anointed with Dr. Hill's Mummy*, and had planted as a cutting in the preceding March.

He was large-hearted, as gardeners generally are. He was not jealous of "Mrs. Snook's Black Cluster," three weeks earlier than his own; and he was glad when Abraham Low had "fifty bunches of grapes on a vine from a cutting planted only three years ago." He rejoiced to see that at Selborne every decent labourer had his garden, which was half his support as well as his delight, and that the common farmers provided plenty of beans and peas and greens for their hinds to eat with their bacon. Had he lived in our days he would have gratefully applauded the efforts which are being made by some of our County Councils and of our benevolent landlords to promote horticulture among the working-classes by the enlargement and improvement of their cottage gardens in the country, and by allotments of lands by the towns.

He was generous to his flowers, his fruits, and his friends—not one of those who exhaust the soil, take all they can get, and make no return; disciples of the Gampean creed, "we gives no trust ourselves, but puts a deal elsevere; these is our religious feelings, and we finds 'em answer." We read of him, on the contrary, in a constant and happy exchange of those reciprocities which should always exist between the gardener and his garden, and by which the liberal soul is made fat. We have long lists of farmers from whom he obtained farm-yard manure, as many as twenty cart-loads at a time, and he imparted in addition "lime, ashes, marl and peat, blacksmith's cinders, and soot from the malt-house." Barrels of soft water stood here and there for the refreshment of his plants in time of drought.

He was glad to distribute, willing to communicate. He rejoices to send specimens of his best fruit to the Lord-keeper, to his brother Benjamin in London, and a portmanteau of perennials to his brother Harry at Fyfield. These recipients, we may be sure, were all as grateful as Brother Tom, who sent him in acknowledgment a ten-gallon cask of raisin wine; and such souvenirs and reciprocities are specially appreciated by us gardeners in our interchange of flowers and fruits.

Let us listen now to this great teacher of natural theology. We shall not learn much about horticulture, and it would be a vain conceit to criticise his simple methods and frequent failures after a progress of one hundred and fifty years and all our acquisitions of practical experience, cheap glass, heating apparatus, imports, and hybridisation; but we may acquire from these records and from his example far more precious instructions—how to prevail by a brave perseverance, overcoming evil with good, and above all, not to restrict our thoughts and admirations, when we are in our gardens, to the culture or the beauty of our plants, but to study with reverent inquiry all the wonderful surroundings, all that reveals to us through the eye and ear God's infinite power and love.

S. REYNOLDS HOLE.

THE DEANERY, ROCHESTER,
November 1899.

Garden-Kalendar for the Year 1751[1]

Jan^ry. 7.—Two rows of early Spanish-Beans in Turner's plot. The four other rows were set in y^e middle of November.

14.—Earthed-up a row of Celery.

23.—Planted 250 loaf-Cabbage plants in Turner's plot.

24.—Sowed first Crop of Radishes turnip, & common; lettuce; & onions under the pales in the little Garden.

24.—Planted-out five bulbs of the Crown Imperial (which I had from a Seedsman in London) in the middle plot of the little Garden.

24.—Planted three slips of the Passion-flower, sent me by M^r. Newlin, in the little Garden.

Feb. 23.—Planted 14 Cuttings of the large, white, Dutch-Currants (which I brought from Godalming) in the little Garden.

27.—New staked the Espaliers.

[1] I am very much indebted to Mr. Henry Maxwell of Selborne for reading through this Kalendar, and giving me notes thereon. As a practical gardener himself, Mr. Maxwell has made some very interesting notes, which I have distinguished by his initials "[H. M.]."—[R. B. S.]

March 7.—Planted five young passion-flower plants, which I had from Oxõn. Gave my U : White four.[1]

March 8.—Sowed a Crop of Asparagus seed : & seven rows of pease in the new Garden for the first Crop.

9.—Set a Layer of Persian-Jessamin, which came from M^r. Budd's.

15.—Earthed up the two last rows of Celery.

D^o.—Layed down three twigs of the mulberry-tree.

21.—Made first Hot-bed : cleared the strawberry, & raspberry-beds.

22.—Sowed in the Hot-bed[2] Cucumber, Melon, Squashes, & Mays-seed. Planted-out Holy-oaks, down the field, & in the Garden-border, & before the House : the seed from the Grange. Sowed a Crop of Carrots, Parsneps, Beets, Radishes, Lettuce, Leeks, Onions ; a small crop of Salsafy ; red Cabbage-seed, Dutch parsley, & Chardoons. There had been a glut of wet for five weeks, & the Ground was rather too moist, but worked pretty well.

23.—In the Hot-bed, two rows of African, & French Marigold seed.

27.—Planted four rows of Winsor-beans in the field-Garden in ground just turned in from Grass.

April 1.—Sowed in the field-garden four rows of marrow-fat pease.

April 2, 3.—Planted four Asparagus-beds with plants of my own raising in the new Garden : sowed a thin Crop of Onions upon them. The Ground was well sanded, & trenched deep with good rotten Dung, but wet when planted.

2.—Earthed-up the two last rows of Celeri the last time.

4.—Sowed a crop of common, & curled parsley : & planted 13 Holy-oaks in the orchard, & yard.

[1] This would be his Uncle Charles, to whom Gilbert was indebted for "The Wakes." He was Rector of Bradley and Vicar of Swarraton, where Gilbert was his Curate.—[R. B. S.]

[2] This bed by means of the great rains lost its heat ; so that the Cucumbers, Melons, & Squashes never came up.—[G. W.]

6.—Sowed a full crop of Carrots, Salsafy, Skirret, Scorzonera, Lettuce, Radishes, Beet. Sowed the seed of a remarkable large leek. Sowed a large bed of sea-cale,[1] which I brought from the South-hams of Devon. Sliped, & dressed the artichoke-beds. A small crop of Onions under Kelsey's Hedge for picklers. The Ground still wet.

13.—Made a second Hot-bed: sowed within the frame, common Cucumbers, Horn Do., Squashes, Melons, Balsams, French Marygolds, purslain: without the frame; Common Celeri, Celeriac or turnip-rooted Celeri, Nasturtium, Sun-flowers, & purslain. Made a cover of oiled paper for the first bed.

18.—Sowed nine rows of marrowfat-pease in the plot just without the field Garden.

April 23.—Planted 300 of Cabbages in the field-Garden. Sowed Holy-oak, Oriental-Mallow, Nasturtium, & Larkspur-seed in the common Ground. Let an old Barrel with the Head beat-out into the Ground to hold water for the Hot-beds, &c.

26.—Cut Asparagus for the first time.

27.—Made a new Hot bed: transplanted the melon-plants into it: sowed some Cucumber-seed in it: & sowed common Celeri & Sunflowers without the frame. Transplanted the Mays into the border next Lassams: transplanted the African Marry golds in the beds, & some of the Cucumbers: sowed 2 rows of Garden Cress, & two of Wh: Mustard on an old bed. Dug-up the last parcel of blanched Celeri.

May 3.—Pulled the first Radishes.

7.—Sowed a Crop of Parsneps, (the first failed) with Radishes, & Lettuce. The first Crop of curled Endive, green, & white. The first Crop of French-Beans, two rows in the new-garden.

9.—Second Crop of Skirret;[2] the first failing.

14.—Crop of Common Beans in the field-Garden.

[1] The Sea cale lay a long while in the ground before it appeared; six weeks at least.—[G. W.]

[2] The Skiret all run to seed.—[G. W.]

May 23.[1]—Pricked-out the red Cabbages. Sowed flowering Lupines of several Sorts, & Lady-pease in the basons in the Field, & the border in the Garden.

24.—Pricked-out the Chardons : sowed five basons with Cucumber-seed in the natural Ground. Transplanted one Holy-oak into the border in the field.

25.—Planted-out the Melons for the last time, & covered them with oiled papers. Sowed a plot of Roman, and a plot of white Broccoli-seed ;[2] & shaded them well with boughs. Sowed some Common, & curled parsley ; & some purslane.

27.—Planted-out three squashes.

28.—Crop of Common Celeri.

June 11, 13.—Row & half of Marrowfats ; & D^o^. of French-beans.

20.—Gathered first pease.

21.—Planted-out Nasturtiums, Sunflowers, Balsams, & French & African Marrigolds in the field & New Garden.

June 24.—Pricked-out a large Quantity of white, & Roman Broccoli.

25.—Planted-out curled white, & green Endive in rows : pricked out three plots of Celeri : planted-out red Cabbages ; & a plot of Leeks from the Giant Leek. Sowed a crop of Endive (second crop) both sorts.

26.—Planted out the Holy-oaks sown in y^e^ Spring.

27.—Gathered first beans, little spanish, set in November.[3]

August 27.—Earthed-up the first planted Chardons ; planted out more : trenched 6 rows of Celeri. Sowed a small plot of turnip-radishes. Planted out several rows of Broccoli.

Septem^r^. 9.—Earthed-up the first row of Chardons for the last time in pots with the bottoms out.

[1] No fine weather, but constant wind, wet, & frost till the 18 of May. Then very dry, & hot.—[G. W.]

[2] A prodigious Crop of Broccoli by shading & watering.—[G. W.]

[3] Latter end of July sowed a large bed of Spinage, and Radishes. Came up very well.—[G. W.]

Selborne Church from the Meadows

12.—Basketed-up the second row of Chardons: sowed a large bed of Spinage.

*Octob*r. 5.—Planted Stock-gilliflowers from Bradley down the Field. Dug up the two first Chardons.

*Octob*r. 11.—Trenched-out a row of Celery in the field Garden: earthed-up the last Chardons the first time.

*Oct*r. 14.—Sow'd three rows of early Spanish Beans in the field garden.

23.—Added one row more of small beans from Oxõn, never sowed but once in England.

26.—Planted seven spruce firs from North-warnboro'[1] in Baker's-Hill: some flowering shrubs in the lower part next the walk: a Quince-tree in the old orchard. Earthed-up the new asparagus-beds in the new Garden.

*Novem*r. 2.—Finished the Shrubbery. A severe frost for planting. Earthed-up the old asparagus-beds.

6.—Planted in a border in the old Orchard several cuttings of Gooseberries, Currants, Honey-suckles, & Scorpion Sennas. Earthed-up the Celery in the new Garden.

*Decem*r. 2, 3.—Trenched some Ground against spring. Earthed-up Artichoke-beds for the winter. Earthed-up the last Chardon; & the Celery.

The Year 1751, was one of the wettest Years in the memory of Man. There were constant Storms, & Gluts of rain from the 20th of Feb.: to the 20th of May. Part of May, & all June were very dry, & burning. But all July, & great part of August were as wet as ever: so that nothing in Gardens in a clayey soil grew to any size: & nothing came to bear 'till five or six weeks later than usual.[2]

[1] Near Odiham.—[R. B. S.]

[2] Gilbert White says nothing about his grapes and peaches, which were probably all a failure this year.—[H. M.]

Garden-Kalendar for the Year 1752

Middle of February: two rows of Beans, & nine of early pease in the field-Garden.

March 4th.—Hot-bed in the field-Garden: the dung had been cast a fortnight, & mixed with Coal-cynders, 3 hundred of Cabbage-plants in the new, & Turner's Garden.

5.—Mulched, & banked-up the Quincunx of firs on Baker's Hill. Dressed the Rasberry-beds, & planted a new one in the new Garden. Sowed a Crop of Celeri on the outside of the Cucumber-frame. Sowed a Crop of Carrots, Parsneps, Leeks, Onions, Skirrets, Beets, Radishes, Lettuce, fine Coss sort. A large Plot of fine Asparagus-seed from Chalgrave in the new Garden. Sowed in the new Garden. French honeysuckles, Columbines, & Everlasting-pease.

6.—Weeded Sea-Cale-bed. Sowed Holy-oak seed, & Oriental-Mallow, a good large bed in the new Garden. Sowed two rows of forward pease in the Garden in the field.

March 7.—Sowed in the Hot-bed Cucumbers, French Marrigolds, African Do.; Indian wheat; & Nasturtiums on the outside.[1] Dressed strawberry-beds. Planted a row of Eschallots. Planted Holy-oaks down the field. New-dug the border at the bench in the Field. Made a screen for the Hot-bed with pease-haulm.

10.—Plashed, & banked-up the Quick-set hedge between Turner's, & the Orchard. Planted Holy-oaks in the New-garden. Sowed poppy-seed, & Larkspur-seed in the Borders of the new Garden. Dressed asparagus-beds:

[1] Appeared all above ground on the 11th. The bed heats well, without being too fierce.—[G. W.]

earthed-up the late row of Celeri in the field-Garden. Mended the Sea-Cale with seed, where it was wanting.

11.—Dunged, & dug-up some Ground in the new Garden. Dug the flower-basons in the field. Sowed the ground on the little mead (lately cleared from nettles) with Grass-seeds. Prepared two basons, one on each side the street-door, for passion-flowers. Thinned the young bed of Spinage.

March 11.—Sowed seven rows of broad beans in the Quincunx on the top of Baker's Hill. Planted in the new Garden three of the large Dutch-Currant-trees, which I brought in cuttings from Godalming last Year.

March 12, *Mem.*—Left the three new Cucumber-frames, taken to pieces, in the old barn, in the straw-bey, leaning against the boards of the new stable. Put the glass-frames belonging to them (but with no Glass in them) in the lumber-garret, & the oaken-pins in a deal-box in the lumber-garret.

Mem.—Seven *very full* cart loads of dung make an exact suitable hot-bed for my great two-light frame: & five D°. for my four Hand-glasses.

April 8.—Planted water'd & shaded the Laurustinus[1] near the Bench in the Field & the Passion flower on each side the Street Door. Sowed a row of Laburnum seed from Ringmer.

10.—Put sixteen Cowcumber plants under the Hand Glasses.

11.—Plant^{d} six Cowcumb. plants from W. Wells in the Old Hot Bed.

13.—Transplanted the Indian Corn in the Cups in the field by the Brickwalk in Baker's Hill & in the Oats towards Willis's. Planted each Corner of Baker's Hill within the Rod Hedge with Beans.

[1] On the 20th of March Gilbert White started for Oxford to fulfil his year of Proctorship, and on the 8th of April, as is shown by his Account-book, he paid £5 for "an 100 p^{d}. weight of biscuit to treat the Masters of Art in Oriel Hall." (See Bell's edition, vol. ii. p. 317.) The entries from this date to May 14 are in another hand.—[R. B. S.]

15.—Sow'd three Rows of French Beans in the field Garden, first Row from the Tub in the Barn, second from the paper Bag in the Kitchen, third from the Chaise. *Mem.* made a Bed of Sand for the Seed.

15.—Planted some yellow Indian Corn in the New hot Bed without the Glasses to supply those that fail in the Cups.

16.—Sowed a row of purple double Stocks from London and half a Row of Brampton Stocks from Ringmer. Sowed in the New Garden on the Border by the Brick-Walk Love lies a Bleeding, Painted Lady Peas, Larkspurs, Yellow Lupines, & Double Poppies.

Mem.—Sow'd Radishes with the Stocks as Miller directs.

May 14.—Planted some Indian Corn, & French & African Marrigolds down the basons in the field. Some D°. Marrigolds in the new Garden.

16.—Made a new hot-bed in the field-Garden : made a ridge with 10 Cups in the new Garden for Cucumbers in the natural Ground, & sowed them with seed.

18.—Sowed a Crop of Broccoli, parsley, & Finochia in the new-Garden.

19.—Removed four plants, with fruit set on them, into the new hot-bed.

20.—Planted-out Sunflowers, & Nasturtiums down the field : sowed a row of dwarf white french-beans in the field-Garden ; mended the early rows of french-beans in D°.

July 23.[1]—Planted 200 white, & Roman Broccoli-plants (which I brought from Oxõn) in the new, & field Garden. Planted 200 Savoys in the field Garden.

27.—Sowed a crop of winter-spinage, with some turnep-radishes, in the new Garden.

29.—Sowed a Crop of turneps for spring-Greens, in the field-Garden.

[1] Gilbert White was back in Selborne from Oxford on the 22nd of July and stayed till the 4th of August, when he again went to Oxford, but he was back at his house on the 18th of September, the journey occupying him two days (17th and 18th), a "portmanteau-horse" costing him ten shillings. (See his Account-book in Professor Bell's edition, vol. ii. p. 322.)—[R. B. S.]

A Crop of D^o^ among the firs on Baker's Hill.

August 3.—Trenched six row of Celeri in the field-Garden. Sowed a Crop of Coss Lettuce & Endive.

*Septem^r^* 15, N : S :—Tyed-up several large Endive.

16.—Sowed a plot of Rhubarb ; & two late Crops of Spinage.

29.—Tyed-up the remaining Endive.

*Octob^r^* 19.—Six rows of early, African Beans, in the field-Garden.

24.—Trenched two rows of Celery in the field-Garden.[1]

[1] On the 25th of October he started for Oxford again, and did not return to Selborne till the 18th of December.—[R. B. S.]

Garden-Kalendar for the Year 1753

January 1st.—Planted three rows of small African Beans in the Quincunx-garden.

2.—Sowed a crop of Asparagus-seed, of our own saving, in the new Garden.

16.—Two rows of broad beans in the fir-quincunx, & two in Turner's Garden.

19.—Five rows of forward pease in Turner's Garden.

23.—Planted five Bushels of turneps for greens.

24.—Thinned out the raspberry-beds.

26.—Sowed a long drill of parsley in New-Garden & a Crop of Asparagus seed in Do.[1]

Octobr. 25, 1753.—Seven rows of early African-Beans in the field-Garden. Three rows of early pease in Turner's Garden. Laid-down several Branches of the Laurustinus in ye little Garden: & some boughs of the Mulberry-tree. Pease destroyed & most of the beans.

[1] On the 29th Gilbert White started for Oxford, and though he was back at Selborne in April for a week, he does not seem to have made any entries concerning his garden in the "Kalendar." After completing his term of Proctorship he went to London and Sunbury, and he was travelling about for nearly the whole of the year.—[R. B. S.]

Garden-Kalendar for the Year 1754

An uncommon severe winter: most things in the Garden destroyed.

Feb., latter end.—A crop of early pease in Turner's: & crop of broad beans in the field-Garden.

March 5.—Made a very deep hot-bed: half the dung cast before hand, & half from dunghill at once. The season uncommonly dry and fine. Sowed a large Crop of spinage in the field-Garden to supply the general destruction made by the severe winter. A wonderful large, useful Crop.

6.—Sowed larkspurs, painted ladies, & Columbines in the borders in the new Garden: & a Crop of Parsley.

12.—Sowed two pots of melons in the Hot-bed, & one pot of Cockscombs: backed up the bed to the top of the frame, the frost being very extreme.

March 19.—Sowed two pots of M^r. Missen's melon-seeds; one pot of early Cucumber-seeds; one pot of Gibson's Capsicums. The bed in fine order, but the frost very severe. One pot more of Cockscombs. The first-sown Cockscombs appear'd about the 21, came up very thick: the first-sown melons about 23, very strong. Raised the pots as soon as they appeared.

26.—Sowed a row of Bosworth's early melons in the hot bed without pots: a row of my own Cucum: seed: & two rows of Bosworth's white-Dutch Cucum: seed,[1] I never sowed before in England.

29.—Cast eleven cart-loads of Hot dung in the field-garden, for melon-beds, & cucumr. ridges.

[1] In the MS. the Kalendar is here interlined "never came up."—[R. B. S.]

29.—Sowed a Crop of Carrots, radishes, white Coss, & *green* Coss lettuce, Parsneps, Beets, leeks, Holy oaks, & Onions. Planted-out some Laburnums raised in 1752, from seeds in Baker's Hill.

April 4.—Made a very large hot-bed for my two-light melon-frame. The Dung very warm.

5.—Made four rows of the broken rows of early beans. Laid fine earth 6 inches thick between the Hot-bet [*sic*]; sowed some radishes, & a crop of Celeri.

8.—Laid-on the earth on the great melon-bed. Bed heats finely: wonderful fine weather.

9.—Sowed a large Crop of marrow-fats in Turner's.

10.—Planted three large, forward Cucumber-plants, given me by Mr. Johnson, in my first Hot-bed.

Planted six Laurels near the pitching in the old orchard; two Larches on the bank near the Ewel-gate; a Scotch, & silver fir in the upper end of the Ewel-close.

11.—Made a melon-hot-bed with 14 barrows of dung, for my smallest frame covered with a paper-light. Made my ridge for three hand-glasses.

12.—Transplanted three of my forwardest melon plants (four leaves each) into each of the lights of my great frame: one to be taken away from each hill, when they are settled. *Mem:* the earth would not turn-out, till the pots were broken.[1] The bed in a fine heat. The plants had fill'd the pots with their fibres. Made a slight hot-bed in the new garden with 8 barrows of dung for hardy annuals: put on my old frame, & old oil'd paper. Sowed a Crop of Carrots & lettuce in the shady quarter of the new garden; 5 pots of sun-flowers, & Nasturtiums in the borders of D°; six rows of broad beans in the field gardens.

16.—Planted-out some cucumber-plants (sadly wire-drawn) under two of the Hand-glasses; & sowed six of M^r. Burrough's melon-seeds under an other; the ridge in a fine heat. The early melon-plants from M^r. Burrough's seeds. Those to be put in the paper-frame from M^r. Missen's.

[1] He evidently forgot to wet the inside of the pots before using them.—[H. M.]

14.—Sowed in the new-garden hot-bed, rows of African Marygolds, & Indian Corn: planted 20 shallot-bulbs, & 12 Garlick D°. in new Gard.

17.—Planted a pot of M^r. Missen's melons in the small frame under the paper light.

15.—Brought 4 white cucumber-plants from Waltham;[1] put them under a Hand-glass.

19.—Very thick Ice, & the Ground froze hard. Frequent showers of snow, & hail. The Hot-beds maintain their Heat well: the melon-beds too apt to steam; & the air too cold to be admitted in any great degree.

24.—Pinched my early melons for the first time: & added a good depth of fine mould, mixed with sand, so as to fill the frames half-way up.

The paper-light torn by a storm, & the melon plants damag'd.

25.—Planted-out about 20 of the best Cockscombs on the upper side of the Cucumber, & two-light melon-frame.

April 25.—Planted a pot of Missen's melons in the small frame; the other pot being damaged by a storm which tore the paper light. Planted some large french Lupines from M^r. Budd in the new Garden.

May 2.—Sowed some Cucumber-seeds under an Hand-glass in the natural Ground, for a natural Crop. Prick'd-out a small bed of early Celeri, just in the first leaf, for early trenches.

8.—Earth'd-up the melon-beds a good depth more: took-off a joint with a knife that had been omitted; stopped some of the runners: the plants in good vigour, & offering for fruit, & bloom.

The cucumber-plants show fruit; but none yet set. The Cockscombs wonderful forward, & stocky; & have showed bloom ever since the end of April.

9, 10.—Dressed the Artichoke-beds; & sowed three long rows of large, white french-beans in the field Garden.

21.—Made a good strong hot-bed to finish-off the

[1] Bishop's Waltham.—[H. M.]

Cockscombs with : plunged 10 large pots in the bed, and half fill'd them with fine earth. Lined-out and earth'd very deep the melon-beds for the *last time;* & rais'd all the frames to the top of the earth. Planted some Capsicums, & pendulous Amaranths from Waltham in smaller pots : & 24 Cauliflowers from Soberton in new Garden.

May 22.—Made a wattle-hedge, about 18 inches high, round the melon-beds, to widen-out the beds.

Moved ten of the best Cockscombs into the large pots in the new beds : the plants were taken-up with a sheet of tin with a deal of earth, & well water'd. The plants very fine, & forward, & in good bloom ; & 22 inches high. Two old frames placed one on the other : & the bed beginning to heat well.

22.—The forwardest bason of Burrough's melons shew'd for fruit. The weather uncommonly dry & sultry. Planted some forward Celeri from M^r^ Beaver's. A large parcel more of my own Celeri in new Garden.

22.—Sowed a Crop of turnep-seed in field-garden, & New-Garden after a soaking shower.

25.—Planted 300 of backward Cabbage plants.

June 5.—The Cockscombs full 28 Inches high ; the combs very broad, & the stems very stocky.

5.—Planted 100 of fine Savoys in the place of the two Asparagus-beds grubb'd-up in the new Garden. Sowed a crop of Coss-lettuce, & Endive green, & white.

6.—Planted out a Crop of Leeks in field-Garden.

June 15, 1754.—Cut first Cucumber. Cockscombs 3 feet high the tallest, widest Comb 3¼ Inches.

28.—Lin'd the Cockscomb-bed which began to grow cool, with 9 barrows of very hot dung.

28.—Only five melons set ; those very large, & in the two-light frame. Missen's plants still cast their fruit ; not one set.

July 2.—The best Comb five inches & half wide : the melons swell apace. The Cockscomb-bed very hot with the new lining. Shady, showery weather for these last three weeks, & not kind for the melons.

6.—Trench'd-out four rows of Celeri in ye field-Garden: planted a large bed of late-sown Coss-lettuce in ye New-Garden.

17.—Planted a large Crop of Broccoli-plants from Captain Gwyn's; with Endive between.

23.—Cut away a vast deal of the melon-vines, which were shot-out beyond all bounds: None of Missen's set yet; & no more of Burrough's. Put a brick under some of the melons. No kind melon-weather since the beginning of June; but a constant cloudy, windy season, but not much rain. Missen's melons shew plenty of fruit, but it all drops-off. The melon's earth too rich; which occasion'd such an abundance of vine: besides the seed was but one year old.

23.—Took the Cockscombs out of their frame: the best comb full seven Inches wide; the leaves very large, & green; and the largest stems two inches & a quarter round: the combs well indented: That Amaranth that was suffer'd to run to many heads, looks very fine, & makes a pleasing variety. The wind is very apt to snap-off the leaves when the plants are first set-out, before the air has hardened them: heavy rains do the same. The tallest plant about three feet four inches. *Mem.*—The constant wet weather rotted several of the Heads of those that stood abroad.

25.—Cut first natural Cucumber.

August 7.—Cut first melon wt. 4½ lb., it was firm & thick fleshed & better tasted than could be expected after such a continuance of Shade & wonderful wet Weather.

The best Combs grow mouldy.

Aug. 14.—Missen's plants too vigourous to let any fruit set. Fine weather: cut away the vines from the melons to let in the full Sun.

15.—Sowed a Crop of Spinage, & Radishes in the field-Garden.

Setembr. 13, 1754.—Collected Mushroom-spawn, & laid it up to dry.

20.—Laid down Baker's-Hill with white-clover-seed; & roll'd it well. A long dry fit of 6 weeks.

28.—Made an Horse-radish-bed in the new-Garden: planted the buds 10 inches deep.

Transplanted a Row of Mint, one of Balm, and one of Pennyroyal.

30.—Parted the Lilly Roots in the Little Garden & planted the large ones in Field Basons, & the offsets in the Orchard, with the Tulips, &c. that if any of them are worth preserving they may be markt when in bloom & remov'd into the Garden. Transplanted Sweet Williams from Waltham into the Little Garden from the New Garden with a few Stocks.

*Octob*r. 1st.—Carryed ten loads of virgin-earth from Dorton into the little mead for the melon-frames.

9.—A thorough soaking rain, after an uninterrupted fit of above six weeks dry weather.

Oct. 15.—Planted a Bason of Double Perrl. Sunflower, No. 6.

Planted a Bason of Single Do. No. 7.

„ „ „ Double Ragged Robin, No. 8.

„ two Roots of Campan Pysam in pots.

„ two Peach leav'd Do. „ „ No. 9.

„ two Canterbury Bells, No. 11.

„ two Roots Double Scarlet Lychnis
„ one in little Gardn. the other in the field } No. 12.

„ two Yellow Lillies
„ two fiery Do. } in little Garden.

21.—Planted some Yellow & purple Crocus' for Borders in the Little Garden.

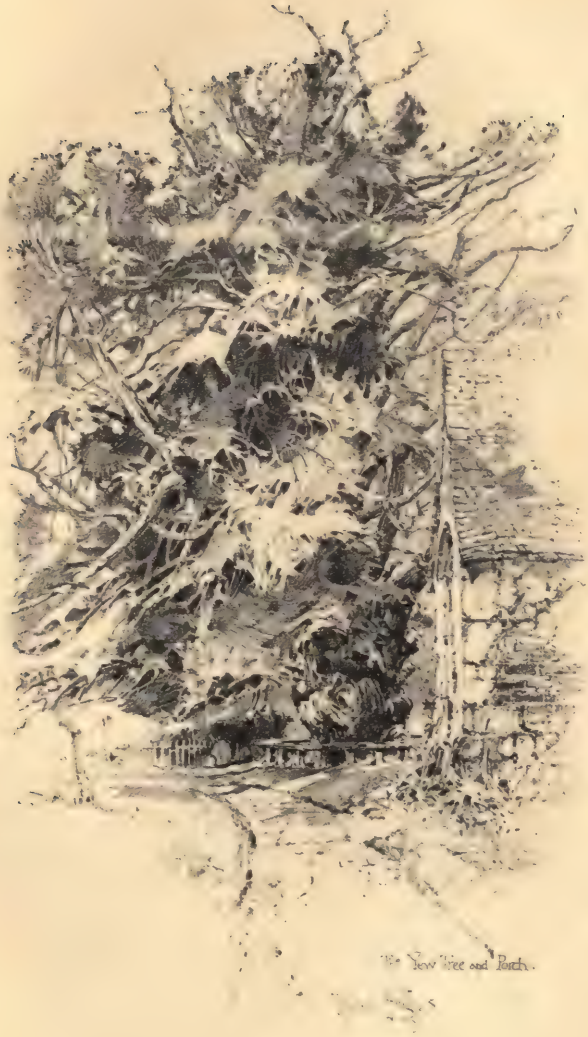
Planted Slips of Pinks & Cloves in the Little Garden & in some of the field Basons.

22.—Planted Fox-Gloves Mulleins Wood laurel & Bears foot from the Wood & soap Wort from Gale's Garden Hedge.

Planted three Opulus' from Berrimans.

Oct. 24.—Sow'd three New Basons with Larkspur seed.

Sow'd a Row of Laburnum seed in the Seedling Bed in New Gard. No. 1.



The Yew Tree and Porch.

Sow'd a Row of Fraxinilla seed in Dº. No. 2.

„ „ Persicaria „ No. 3.

Planted Golden Rod and Stᵗ. Peter's Wort from Dʳ. Bristow's.

Planted some Xyphiums or Bulbous Iris' in the Little Garden. *Mem.*—Some offsets in Seedling Bed No. 10.

Planted some Tuberous rooted Iris' in the field. *Mem.*—The Xyphiums were sent by mistake.

Planted a Spiræa Frutex from Mʳ. Budd.

Nov. 5.—Transplanted a Row of Laurustines into the Gate from the Little Garden.

6.—Moved the Layers of Laurustinus into the Nursery Bed in the Orchard.

9.—Planted four Box Trees (which came from behind the old Pales) in the vista at the upper end of yᵉ field.

Remov'd four Rose Trees into one Bason in the Field. Very wet Weather, but not very cold.

Novʳ. 20.—Planted 9 rows of Mazagon beans in Turner's Garden. Earth'd Asparagus-beds.

21.—Made, earth'd, & thatch'd a musroom-bed seven feet long according to Miller.

21.—Altered the square-plot behind where the old pales stood, & threw it into a grass plot, with two very wide borders, one towards the street, & one towards Kelsey's Gate.

Planted-out 3 doz. of Coss lettuce under two old frames to stand the winter in the new Garden near the melon-beds.

Dec. 17.—Put the Spawn into the Mushroom Bed.

31.—Earth'd-up the second Crop of Celeri.

Garden-Kalendar for the Year 1755

Jan. 6—Sowed a row of Holly-berries behind the Filberts against Kelsey's Yard.

Feb. 7.—Made an Hot-bed with the small frame for White-mustard, &c., & an other with an hand-glass for Celeri. Sowed it last week in Feb.

19.—Sowed half a pound of spinage in the field-Garden: 6 rows of forward pease in Turner's D°. Planted 200 of Cabages in Field D°.

20.—Sowed a Gallon & half of broad beans in y^e^ field-Garden. Very severe frost.

21.—Made an Hot-bed for early radishes, hoop'd it over, & cover'd it with a large mat.

March 12.—Very deep snow, 7 inches on plain ground.

13—Made a very deep & large Hot-bed for my melon-seeds; &c: with seven cart-loads of dung: thatch'd the edges of the bed without the frame.

14.—Made slight Hot-bed for the Arbutus-seed.

March 15.—Sowed two pots of M^r^ Garnier's Cantaleup-Melons 1753: two pots of M^r^ Hunter's of Waverly D°. 1752: two pots of Cockscombs: one pot of pendulous Amaranths: one pot of sensitive plant-seed: one pot of Arbutus-seed: two pots of my own large Andalusian-Melons. *Mem.*—Carry'd M^r^ Garnier's Cantaleupe-seed (being but two years old) in my Breeches-pocket 6 or 8 weeks.[1] Sad snowy, wet, cold weather.

17.—Scattered the overplus of the Arbutus-seed among

[1] Gilbert White evidently thought that old seed was better than new, and that carrying it in his pocket would add to its germinating powers.—[H. M.]

the new-planted Filberts in the orchard. *Mem.*—To observe if any grow.

17.—Hot-bed heats well.

19.—Sowed five rows of Marrow-fat-pease in field G.

20.—Planted 74 Laurels from Waverley[1] down Baker's-Hill with two Ilex-acrons between each two : one portugal-laurel, one weeping-willow, one parsley, one black mountain-Virginian-Elder, one flowering-Rasp : two stoneless barberies, 6 roses, down the basons in the field : 2 Dutch Honey-suckles against the Trellis in new Garden : & some Pine, & Chili-Strawberries in new Garden.

21.—Sowed 12 seeds of Cedar of Libanus, a Crop of Larches, Weymouth-Pines & Cluster-pines, in two Boxes standing to the morning sun in the field-garden ; & hoop'd & netted y^m. Planted Ivy round the little-house, & a Bed of Rasps at the north end of the House. Planted a fine Mulberry-tree, of my own raising from a layer, in the new opening in the new-Garden.

27.—Sowed more Melons in the Pots that fail'd.

31.—Sowed one pot of M^r. Garnier's Cantalupe 1753, one pot of L^d. Lincolns Green Cantalupe 1751, one pot of M^r. Hunter's Yellow Cantalupe 1752, and one pot of Miller's very fine old seed.

April 1.—Sowed a Crop of Carrots, Coss-lettuce, & parsneps in the New-Garden.

2.—Cast 20 Cart-loads of Dung in the melon ground.

3.—Planted 13 Laurels round the necessary, & against the street.

14, 15.—Made a large melon-bed with 20 loads of dung for six lights in the field-garden. The weather wet, & unfavourable. The melon-seeds in the pots came-up weak, & poor, the season not favouring.

April 16.—Sowed a pot of Romania-melon-seed 1753 : & a pot of Zatta 1751 : a pot of three-thorned-Acacia-seed ; & a pot of seed mark'd only Acacia : Evergreen-Oak Acorns : Bird-cherry-seed : cut-leaf'd tulip-tree seed : Boorcole, red

[1] Near Farnham.—[H. M.]

& green: savoy seed: Campanula Pyrimidalis: Scarlet Lychniss: Holy-oak-seed: leeks: Beets: parsley, & onions.

17.—Sowed Basons of Double-China-Aster, Double-Larkspurs, Nasturtiums, Nigella-Romana, Venetian-poppies, Oriental-mallows, Venus-Lookinglass, Candy-tuft & Chrysanthemums in the new borders, in the Garden; & in the Basons in the field. Sowed some Orange-Gourds, & long-Gourds under the Arbutus mat. Painted-Ladies in the New-Garden.

19.—Planted some foxglove-roots from London in the shady Border in the new-garden.

April 19.—Turned-out two pots of Cantaleupe, & two pots of Andalusian-melons into the two great frames. The plants in thriving condition, but the bed hardly shews any signs of Heat. The weather uncommonly dry, sunny & sultry.

20.—The Romania, & Zatta-mellons appeared out of the Ground.

21.—Turned-out two pots of Cantaleupe-melons into the two single lights, the one Glass, the other paper.

22.—Made an Hot-bed for two Hand-glasses & one paper light, with seven loads of Farmer Parsons's dung: earth'd the basons with Dorton-mould. The Acacia-seeds appeared to day. Sultry weather. Cut a good mess of Asparagus for the first time.

23.—Planted large plot of Artichokes from Dr. Bristow's in the new-garden; & sowed a Crop of Coss-lettuce between. Made a slight hot-bed with 1 load of dung for sunflowers, African-Marrigolds, double Asters, & Celeri; & hooped, & matted it. Made Cucumber-ridge with two loads of dung for two Hand-glasses.

April 25.—Transplanted out of their pots some Zatta-Melon-plants in the paper-light; & some Romania-Melon-plants under the two hand-glasses: the bed heats very finely.

Transplanted some Cucumber-plants under the two other Hand-glasses. Showry, warm weather.

26.—Turn'd-out a pot of Cantaleupe-Melons into the original seed-bed, & earth'd it up a great depth.

28.—Planted-out 6 Acacias in 6 penny-pots: very long tap-roots.

29.—Transplanted some Cocks-comb-plants, not very forward, into one of the two-light melon-frames. Transplanted three Orange-gourd-plants under the melon-ground-Hedge. Planted two Storax-trees, from Guernsey, sent me by Will: Yalden, in one of the basons of the field.

June 23.—Cut the first Cucumber.

July 17.—Planted-out plots of Endive-plants. Turned-out remarkably fine & large.

July 18.—Only six brace of melons set. The Acacias in the pots very fine. A fine Crop of Cluster-pines: 10 or 12 Weymouth-pines: 2 Cedars of Libanus: not one Larch, nor Arbŭtus.

An uncommon hot, dry summer to this time.

18.—About 500 savoys-plants, & about 6 score boor-cole plants,[1] all of our own raising, in Turner's Garden.

August 1.—Cut the first Melon. *Mem.*—It hung too long, & was mealy. This was intended for a Cantaleupe, but proved a common sort.

26.—Gather'd the first Mushrooms from spawn put into a bed last Decem$^{r.}$ y^{e} 17$^{th.}$

Only six brace of melons set: hinder'd in their ripening by a long run of cold, shady weather.

28.—Planted-out a great many Holy-oaks[2] in the new-Garden, Yard, & field.

28.—Tyed-up 30 Good Endive-plants. More should be tyed-up about the 18th of Septem$^{r.}$ with different-colour'd Yarn.

Septem$^{r.}$ 1.—Planted a plot in New-Garden with Pine-strawberries brought from Waverly.

Those planted in the spring dyed.

2.—Cut two Cantaleupe-Melons: the biggest weigh'd

[1] Borecole—a kind of sprouting Kale or Cabbage.—[H. M.]

[2] This would be the old single species still seen in cottage gardens.—[H. M.]

3 p^{ds} 5 oun : they were perfectly dry, & high-flavour'd, notwithstanding the weather had been shady, & cool for three weeks ; & uncommonly wet and stormy for the last week.

2.—Made a large Musroom-bed, eight feet long ; used eleven Barrows of hot dung with no layers of earth intermix'd.

15.—Planted the mushroom spawn brought from Dean on the new made bed, it was moderately warm, the larger lumps were set on the ridge, the smaller earth near the bottom. *N.B.*—I planted the S E side & Thomas the N W.[1]

19.—Tyed-up more Endive : those tyed-up before not well blanch'd, for want of being ty'd with *double* yarn, & in *two* places. The new Musroom-bed heats gently. The double China-asters make a fine show. *Mem.*—The green-Endive, by being so much longer, tyes-up, & blanches much better than the white.

Septemb^{r}· 23.—Put the Acacias in their winter-quarters in a frame under the Hedge of the melon-ground : planted some lettuce to stand the winter in the same frame, & along the border : placed an old frame for a Quart^{r}· of a Hund : of Cauliflower-plants : put the two boxes of the seedling-pines under the sunny-hedge. Sowed a Crop of persicaria-seed, & green Coss-lettuce on the same border. Sowed a Crop of Belvedere on the same border.

Octob^{r}· 6.—Sent the Cauliflowers from Dene.

30th.—Planted two basons in the field with Canterbury-bells. Planted a Nursery of some Scorpion-sena, & Spiræa-suckers in the New-Garden.

Nov^{r}· 2.—Planted ten rows of Mazagan-beans (never planted in England) in the field-garden.

Planted four Pyramidal-Campanulas in four large pots, & plunged them in the Border under the melon-screen.

Planted 30 full-grown perennial-sunflower-roots in the

[1] This would seem to have been an experiment, and the result would doubtless be watched with interest, to see who succeeded best in the planting, himself or Thomas !—[H. M.]

border against the street, & Kelsey's Yard ; & in the upper part of the basons in y^e^ field.

Nov^r^. 2.—Planted some slips from the perennial-sunflowers in a nursery.

Fine settled weather for 9, or 10 days before : the only good weather since July.

The Campanulas, & sunflowers lay in the ware-house in London, & were somewhat damaged by the closeness of the Box.

6.—Sowed two more patches of y^e^ last year's persicaria-seed under the melon-hedge. One plant of the last sowing came-up very strong.

11.—Most uncommon frost for one night, & considering the season of the Year : Ice near an inch thick & the dirt hard enough to bear an Horse.

6.—Planted 12 cuttings of Tamarisk sent down from London with the Peren^l^. Sunflowers, &c.

24.—Turn'd the Horse-path at the Bottom of the Baker's-Hill, & continu'd-out the Quincunx-basons, and prepar'd them for shrubs.

25.—Staked & tyed the Quincunx of Firs that were much loosen'd by the late violent rains, & winds.

Decem^r^. 1.—Earth'd-up the Artichoke-beds for the winter.

Eleven evergreen-oaks alive down Baker's-Hill.

Decem^r^. 27.—Finished two large three-light Melon-frames, each ten feet & an half long, & five wide in the clear ; & containing 97 feet of Glass in y^e^ lights, & an half foot.

A terrible winter for Earthquakes, Inundations, Tempests, and continued Rains. No frost worth mentioning except on the 11^th^ and 12^th^ of Novem^r^.

Garden-Kalendar for ye Year 1756

Jan. 23.—Made an hot-bed on the dung-hill in the Yard, with Mr. Johnson's frame, for white-mustard, & cress.

30.—Earthed-up the backward Celeri.

31.—Planted two Cuttings from the weeping-willow in the New-Garden.

Feb. 14.—Planted 200 of Cabbage-plants in ye field-Garden.

14.—Made a Melonry in the Field-Garden 45 feet long, & lin'd it at ye back very warm, & secure with some damaged rushes of John Berriman's: lin'd ye two side-screens in the same manner; & in particular that towards ye Cucumber-bed, that it's Farina might not mix with ye melons.

Mem.—The winter-Coss-lettuce, which stood very safe under frames during the severe dry frosty winter 1754: are this winter rotted by dampness, tho' there have been no frosts at all to touch ym.

Feb. 18.—Snowed very hard from morning to night: by ye evening the snow lay 14 inches deep on plain Ground; & lodged so heavy on the Hedges that it broke ym down in several places; & weighed all the shrubs flat to the Ground. Went off with a gentle thaw without any rain.

23.—Cast eight of our little Cart-loads of hot dung in the field-garden for ye melon seed-bed.

24.—Sowed quartr. of a pound of spinage in the field-garden.

25.—Planted six rows of large Winsor-beans in ye field-Garden: six rows of marrow-fat-pease in Turner's Garden.

27.—Planted a row, and a half more of broad-beans.

28.—Made the Melon-seedling-Hot-bed with the whole eight loads of dung except a little for the Celeri. Weather very fine, & the Ground in good dry order.

Made a Celeri-Hot-bed for an hand glass, & sowed the Celeri-seed.

Planted some lilac-suckers from Bradley in Turner's; & some Cuttings of the parsley, & Mountain-Elder. Planted a large lilac-sucker in a field-bason.

March 1.—Sowed ten pots of M^r. Hunter's red-seeded Cantaleupes 1752: & two pots of M^r. Hunter's white-seeded Cantaleupes 1754.

Sowed a pot of early prickly Cucumbers. Fine weather; & bed heats well.

Sprinkled the bed with quick-lime to kill the small snails, & grubs.

2.—Raised the fence of the Cucumber-Ground equal with that of the Melon-Ground, & lined it with pease-haulm: so the two fences screen the whole North-end of the field-garden the length of 70 feet.

6.—Removed the two Larches from the Ewel-Close where one had been damaged by the Horses, into the Basons in Baker's Hill. Cucumbers began to appear.

Removed one of the Laburnums into a gap in the orchard-hedge. Planted some layers of Jasmine in Turner's Garden.

7.—The Melon-plants began to appear.

8.—Sowed 12 basons in the field with double Larkspur-seed. One ounce will sow 8 basons very thick.

March 8.—Sprinkled more quick-lime round the young Melon-plants.

9.—Sowed a box of Polyanth-seed: cleansed the moss & filth from off the Acacia-pots, & sifted on a little fine earth. Sifted a little fine earth over the seedling Cedars of Lib: & pines in the boxes.

10.—Sowed a Crop of Carrots in the New-Garden, & mixed with it some radishes, onions, & coss-lettuce both green, & white.

11.—Sowed one pot of M^r. Hunter's White-seeded Cantaleupes 1752.

Forked the Asparagus-beds; & raked y^m for y^e first time.

Made a rod-hedge round the Quincunx of firs. Very dry March-like weather: no rain since the great snow Feb. 18.

13.—Hot, sunny days, & fierce frosts at night. Thick Ice.

15.—Brought a four-wheel'd post-chaise to y^e Door at that early time of Year.[1]

16.—Cast 15 good Dung-carts of hot dung for the melon bed: 9 of our own dung, and 6 of Farmer Parsons's. The Ground as dry as at Midsum^r.

March 17.—Sowed an ounce of onion seed in y^e New-Garden. Transplanted the Cucumber-plants from the pot, to the full Ground in the frame. Planted some very large potatoes from Swarraton in Turner's Garden. The Ground was double-trench'd in the winter; & some rotten dung, & old thatch were dug-in at planting.

18.—Sowed two pots of Arbutus-seed, & one pot of Magnolia-seed, & plunged them in the Hot-bed.

19.—Snowed hard almost all day. Several of y^e Melon-plants go-off with a mouldiness that spreads on the leaves.

20.—Received a large Cargo of Shrubs, & flower-roots from Broth^r. Thomas in London.

22.—Planted in the Basons in the field, a Moss-provence, & some damask, Monday, & red roses; Spiræ frutex; blue, & white lilacs; Syringa; early golden-rod; sumach; Althæa frutex; guelder-rose; coccigrya; female dogwood; double flowering-thorn, & Persian Jasmine.

In the New-Garden forward-honey-suckle; Lavender-cotton; golden-sage; double & single Lychnis; blue, & white Campanulas; catchflies; blue, & peach-bloom Mich: daises; striped bulbous Iris; ribbon-grass; double, & variegated perriwinkle: & fruit-bearing Passion-flower near the brew-house-door.

[1] Gilbert's surprise is natural, when it is remembered that the roads were often impassable in winter round Selborne. He, it will be noted, almost invariably rode on horseback in the winter.—[H. M.]

Snowy frosty, untoward weather for planting. Four new hand-glasses fm Alton.

March 23.—Back'd-up the seedling-bed, which began to lose almost all its heat, with seven barrows of hot dung.

Drew a parcel of the cast-dung from the side of the heap, & made an Hot-bed for an Hand-glass: sowed three pots with yellow, & white-seeded Cantaleupes 1752: & several cucumber-seeds round the pots for the ridge-hand-glasses. The first Melon-plants continue to go-off with mouldiness. Danger of a scarcity of plants for the frames. The Cucumbr. plants in the same frames very healthy. Storms of Hail, & rain all day.

24.—Hard frost, & thick Ice.

March 27.—Frost so fierce that it damaged the flowers, and shrubs very much: Ice near an Inch thick: heavy snow all the morning.

29.—Dress'd the Rasberry-bed.

31.—Planted four limes[1] in the Butcher's Yard, to hide the sight of Blood, & filth from ye Windows.

April 2.—Planted out of their winter-box a bed of Cauliflower-plants. Sowed two pots of Larch-seed; two pots of China-Arbor-Vitæ; & a pot of Arbor-Judæ-seed.

3.—Made my great ten-light melon-bed with fifteen dung-carts of hot-dung. Laid an Hillock of Dorton-earth in the middle of each light; & cover'd the whole bed about two inches thick with earth. The earth wet & cloddy, & not in condition for the purpose. Supply'd the Artichoke-bed (which had lost most of its plants) with very good slips from Dr. Bristow's.

5.—Sowed a large Quantity of Holy-oak-seed, with some radishes for the bugs; crop of parsneps; crop of Leeks; row of parsley: Row of Larch, & Judas-tree-seed in the common-ground: four rows of Evergreen-oak-acrons; plot of Tree mallow, & curled mallow; some Honesty-

[1] Three trees are still there, facing "The Wakes." Mr. Maxwell can remember the fourth, but it was removed when the yard on the north-east side of the Butcher's Shop was built. These limes are now 146 years old. —[R. B. S.]

seed; Date-stones; crop of red-beet; & some cress, & white mustard.

April 6.—Made a Cucumber-bed for three Hand-glasses with two dung-carts of Parsons's Dung. The trench 16 feet long, two & an half broad, & one & half deep: the dung did not reach to the level of the Ground by some Inches.

Made a slight Hot-bed for hardy annuals with seven barrows of dung: laid fine earth over it five inches deep.

Sowed the border against Parsons's Yard with Sunflowers, Lady-pease, Venetian-mallow, Nasturtium, Larkspurs, Candytuft.

10.—Sowed in the annual Bed Sunflowers, African Marrigolds, Orange-Gourds, Double-China Aster, Marvel of Peru, Celeriac.

10.—Turn'd-out eight pots of Yellow-seeded Cantaleupes, & two of white into my ten great Lights. The white-seeded under the tiled lights. One pretty good plant under each light. The bed but in indifferent condition by reason of the continual rains, & black cloudy weather.

April 10.—Sowed some Yellow-seeded, & white-seeded Cantaleupes in the old seed-Bed, for fear some plants in the lights should miscarry: some Romania-melon-seeds in D°. for y^e^ Hand-glass-ridge.

Mem.—Those melon-plants that were once seized with a mouldiness constantly dy'd away by degrees, 'till they were quite devour'd by it; except those plants on which I tryed the experiment of clipping-off the infected part with a pair of scissors: when they recover'd, & afterwards grew pretty well. The only method I can find of preventing the earth from falling from the melon-plants in turning them out of their pots, is by plastering-down a cake of wet Clay, over the mouth of the pots. Those pots turn-out best that have two or three plants; because there are more roots to hold the earth together. No snail ever comes a near a place well sprinkled with quick-lime, especially in a frame where the wet is kept-off. And what is very strange,

quick lime, tho' plentifully shaken upon them, will not injure the youngest, or tenderest plant.

April 12.—Sowed plot of Savoy-seed, very good sort; & plot of Borecole[1] red, & green: some Pendulous Amaranth in Annual Bed. Planted quart^r. of Hund: of laurels against the street in the new-Garden to thicken y^e screen; & down Baker's-hill, where the turkeys had destroyed them.

13.—Planted some Laurestines down Baker's-Hill, where the Laurels were dead. Constant heavy rains day, & night.

Six rows of Marrowfats in Turner's Gard^n. This April thro' a most surprizing season for wet, & frost. The 20^th was a vast rain: but on the 26^th it rain'd for 22 Hours without ceasing, & brought on such a vast flood as has seldom been seen; the meadows round Oxõn being entirely cover'd a great depth.

May 1.—Received from Broth^r. Thomas an Arbutus, common Cypress, Portugal-Laurel, Cluster-pine, Silver-fir, Swedish-Juniper, Evergreen Cytisus, Passion-flower, & some small evergreen Creepers. Fine plants, & most of them turn'd out of pots & sent down with all their earth about y^m. My ten-light Cantaleupe-bed so flooded by those vast rains that all the plants are dead.

Planted y^e evergreens in the basons in the field.

May 4.—Heavy storms of snow, & thunder.

5.—Frost so hard that the dirt carryed.

6.—Broke-up my ten-light Cantaleupe-bed, & work'd it up with five dung-carts more of hot-dung. Sensible heat remaining in the bed, tho' it had been so flooded. Put earth into the boxes, in good dry order. Soft mild shower.

7 : 8 : 9.—Very wet season.

10.—Planted my ten-light melon-bed a second time with Waverley-Cantaleupe, & Romania-melons. Bed in fine order for Heat.

Planted-out the seedling Cedar of Libanus in a penny-pot.

[1] See *antea*, p. 219, "Boorcole."—[R. B. S.]

Four lights of Cantaleupes, & six of Romagna-Melons.

May 11.—Violent rain, snow, & hail: Ice in the night.

12.—Made a ridge for five hand glasses, with four dung-carts of dung.

Received from Kensington one Holly-leav'd Oak, one Olive-leav'd D°, one red Cedar of Virginia, one White D°, one Spanish-Evergreen Creeper, one Balm of Gilead-fir, two Weymouth-pines, one Acacia-leaved-Cypress. All nicely pack'd with a deal of earth about their roots; & about a foot & half high.

From Williamson Nursery-man at Kensington.

14.—Sowed some common green, & white-Dutch Cucumber-seeds under an Hand-Glass.

Set up my first Oil-Jar Vase at the bottom of the Ewel-Close with a pannel only in front: Mount, pedestal, & Vase nine feet high. Dripping season still.

May 15.—No one Day so much as spring-like before: now absolute Summer.

Sowed a crop of Green-Coss-lettuce among the New-planted Artichokes.

Planted three of the Hand-glasses with Cucumber plants, three plants in a Glass.

May 17.—Pricked-out the seedling Weymouth, & Cluster-pines in the New-Garden.

Prick'd-out a plot of Celeri in Turner's.

18.—Planted 300 & quart^r^ of Cabbage-plants in the field-Garden. Very hot sunshine with a cold East-wind.

19.—Set-up my second Oil-jar vase at the top of the broad walk, with a face to the cross-walk. Mount, pedestal, & Jar some inches above nine feet high.

19.—Pinch'd my melons to make them throw-out runners: the melons for want of having been in pots, a long while in taking to y^e^ Ground.

20.—Planted six rows of large white Dutch Kidney-beans as long as y^e^ Spinage will permit.

May 24.—Earth'd-up the melon-hillocks for y^e^ first time with Dorton-mould. Mould in fine order.

28.—Bright sunshine, & smart frosts for this fortnight

past, with a cutting East-Wind most part of the time : now a small shower.

Ground strangely bound, & parched. Cucumbers begin to set.

31.—Cut the first Cucumber : 3 more almost grown on the same plant. Planted all the Hand-glasses with Cucumber-plants, white, & green. Planted some basons in the field with Sunflowers. Bright, settled dry weather ; the Ground bound as hard as a stone.

June 1.—Five of the melon-plants have runners with two Joints.

3.—Pinched the forwardest of the melons at the third Joint : & pinch'd-off all the small buds about their stems. Best Cantaleupe knit for bloom.

7.—Three weeks & three days drought, except a shower once for a few minutes. Now moderate showers.

June 10.—Earth'd Melons second time with Dorton-earth : second runners show second Joint. The Glazier cemented the large lights, which drip wretchedly : mended but not cured. Frequent Showers.

16.—Prick'd-out five Hund : of Savoys ; & 175 of Borecole. Length'ned-out rows of French-beans. Melons throw-out plenty of fruit ; male-bloom full blown. Hot, dripping weather, which makes the melons grow wonderfully. Prick'd-out more Celeri.

19.—Lined-out the melon-bed with 8 dung-carts of Dung ; & laid-on the full thickness of earth without, & within the frames. Earth'd the frames twice with Dorton-mould, & the last time with common Garden-mould.

27.—Gathered Mazagan Beans.

Several melons set.

Sowed Crop of Endive.

July 24.—Full twenty Brace of Melons, most of them well-grown : the plants in great vigour.

July 26.—Planted-out Crop of Endive in the field-Garden.

27.—Planted-out first plot of Savoys.

29.—Planted-out Borecole, & rest of Savoys.

Aug^st. 2.—Cut first Melon, a Romania: very early, considering the first bed was destroy'd.

3.—Cut brace & half more of Romania: turn'd, & tiled the rest, which was much wanting. Cut 70 Cucumbers.

Aug: 4.—Trenched-out 8 rows of Celeri: planted some of the Borders in the New-Garden with Polyanths of my own raising.

Cut four brace & half of Melons this week.

15.—Had cut eleven brace of Romania-Melons: one from the plant that was put a seed into one of the great frames on May y^e 10.

18.—Planted six pots with Cuttings of Geraniums. Mushroom-bed bears pretty well at one end.

Aug: 18.—Sowed Crop of Turneps in the Quincunx, & among the Savoys.

21.—Sowed half pound of spinage; & with it turnep-radish seed; & brown dutch, & green-Capuchin-Lettuce to stand the Winter.

22.—Cut the first Cantaleupe, a very small one: it was almost cleft in two: was high-flavour'd, & vastly superior to any of the Romanias. This melon set the first of any; & was full 8 weeks in ripening. The plant on which this grew was one of the first crop, the only one that survived; & was moved in a careless manner back into the seedling-bed; & brought back again when the bed was new-worked-up.

Constant heavy rains for a week: the wheat that is down begins to grow.

24.—Cut second Cantaleupe, the largest in y^e Boxes; weigh'd 3 p^ds. 7 oun: sent it to London to Broth^r. Tom. Turn'd colour before it began to smell, which is unusual.

Aug: 25.—Planted-out Holy-oaks in the New-Garden next the street; & among the limes in the Butcher's Yard.

26: 27: 28.—Cut a brace & half of M^r. Hunter's Cantaleupes: a brace were not much embossed on their Rind, & not so high flavoured as might be expected: the other was very rough, very firm fleshed, high flavoured, & very

weighty for its size. N : B : All the Cantaleupes yet have chang'd colour, & smelt without cracking at the Stalk.

28—True fine Harvest-weather. Wheat much grown about the Country ; some grew as it stood.

29.—Cut one Waverly, & one Miller's Cantaleupe : sent the Waverly one to Bradley.

Miller's tho' it promised well was very abominable ; being about an Inch thick in Rind, without any flesh or flavour. The rind was finely emboss'd, & the shape Compressed like a Turnep. Brought the only flowering Pyram : Campan. into the parlour : it produced only a single stalk.

*Septem*r. 2.—Tyed up 30 Endives : first tying.

7.—French-beans so backward that not above three boilings have been gathered yet.

11.—Cut the other Miller's Cantaleupe : turn'd out as execrable as the former.

16.—Brought a large Cantaleupe from Waverley, weight 3 pds. 9 oun. : turn'd-out very high-flavour'd, & curious : saved the seed.

25.—Planted 300 laurel-Cuttings in Turner's.

*Octob*r. 3.—Cut brace & half of Romania-Melons, good for latter Crop.

*Octob*r. 9.—Set nine Hyacinths, given me by Mr. Trinley, to blow in Glasses in ye parlour.

25.—Cut last melon : the 41st.

*Novem*r. 9.—Planted ten rows & half of Mazagan-beans in the field-garden.

One Quart of true small mazagan-beans will plant eleven good rows.

9 : 10 : 11 : 12.—Extream hard frost, & bearing Ice. From the 18th. to ye 25 : uncommon fierce frost, & some snow.

Garden-Kalendar for the Year 1757

Jan. 1st.—Planted a row of Tulips, & Ranunculus's, given me by my Brothr. Thomas, in the Border in the New-Garden next the street. Dug-out the soil, & filled the trench with earth well-mixed with lime-rubbish.

3.—Planted the Fir-Quincunx with five rows of Winsor-beans: dunged the ground, that was very poor, with ten wheel-barrows of very rotten dung. After the beans the ground to be trench'd with Celeri.

Levelled, & widen'd the Area of ye Melon-Ground; having made an underground Drain to prevent its being flooded any more.

4.—A most extraordinary dry season for wheeling-out the dung of the old Hot-beds; & for trenching the ground for Crops.

On the 2nd. began a frost, which on ye 3rd. & 4th. by means of a strong East wind became very severe, so as to freeze-up all the pools & ponds: the ground, which had been quite drained before by a fortnight's dry weather, look'd white & dusty, & was not the least relaxed or greasy at noon for many days together. On the 10th. came a thaw, & a little snow. The Laurustines, & other tender Evergreens began to suffer, a little especially on the severe windy days. Froze-up again, lasted (tho' there were frequent hasty showers) without the frost ever being out of the Ground till Feb. 6th. Great Quantities of snow fell, which being half melted by the rain made the country slippery to a strange degree. The frost penetrated deep into the ground, & seems to have been the severest since that in 1740. Seems to have done no material damage to

vegetation; but has made the Ground very light, & mellow.

Feb. 10.—Sowed half a pound of spinage in the field-Garden, with some Browndutch, & Capuchin-lettuce; some common, & white-turnep Radishes.

11.—Several of the Hyancinths are tall, & just ready to blow.

12.—Planted six rows of Hotspur-pease, & two of Marrowfats in the field-Garden.

Summer-like weather: the ground by means of the frost perfectly mellow. Sowed a crop of parsely in the New Garden.

17.—Made an Hot-bed in the Yard with 16 wheel-barrows of dung, only to raise y^e^ Cucumber-plants, & a little Cress, & white-mustard. To be taken away, & work'd up in a future Bed.

Feb. 18.—One of the Sunbury Jacinths (y^e^ only one, not decay'd) in full bloom. Those from M^r.^ Budd drawn-up very tall but not blown.

19.—Sowed some early Cucumber-seeds under one of the Hand-glasses.

21.—Planted 100 of Cabbages in Turner's: sowed hand-glasses in the Yard with Cress, & white-mustard.

24.—Carryed eight of our little Cart-loads of dung into the field-garden for a seedling melon-bed.

28.—Made a very stout hot-bed above three feet thick for the melon-seeds, & to forward the Cucumber-plants, with 8 Cart-loads of dung. Saved about two barrows of dung, & made a Celeri-bed for one Handglass.

March 2.—Sowed the new Hot-bed with Yellow-seeded Waverley Cantaleupe 1752: & White-seeded Waverly D^o.^ 1752 & 1754: with Dutch Cantaleupe (never sowed in England) 1754: & with John Bosworth's Zatta-melon from Florence 1754. Sowed also a few early Cucumber-seeds for fear the plants should fail.

Sowed a small Hand-glass Hot-bed with Celeri, & Celeriac. Dressed Rasp-bed: & hoed beans: but a thin Crop.

4.—Sowed 14 basons in the field with double upright

larkspur-seed; & bush'd them well. Sunk a wine-Hog's head in the field-garden for a well.

5.—Sowed some Asparagus-seed to mend the beds that are decaying.

Very dry weather, & severe frost.

8.—The seedling-melon-bed, tho' made so strong, would not come to any Heat: so I cut away the bed sloping-in on every side, & lined it very thick with four little cart-loads of dung just fresh from the stable.

March 11.—Bed begins to heat very well: prick'd the cucumbers from under the Hand-glass into it. Melons not yet come up. Lost about a week in the forwarding the Cucumber-plants by the bed's not heating. Sowed the Hand-glasses in the Yard with more Cress, & Mustard. That little bed keeps its heat well still.

14.—Sowed 22 Mazagan-beans, all worm-eaten to try if the rest will be fit to plant next Year.

Tyed the melon-bed, that crack'd & was like to bulge-out, with a strong cord, that seems to secure it.

Made a melon paper-House 8 feet long, & 5 feet wide: to be covered with the best writing-paper.

Planted two seedling white-Elders in the little mead.

17.—Supplyed the basons where the shrubs were dead, with new ones.

Melon-plants come-up very fast.

18.—Planted a weeping-willow, a fine plant, one Year from a Cutting, in one of the basons in the field: planted a black-Virginian-Mountain-Elder in the little mead.

19.—Sowed 20 more Yellow Cantaleupe-seeds, Selborn 1755: to supply the room of any plants that may fail.

Sowed 9 basons in the border next Parson's Yard with double Larkspurs. Some of the forward Cucumber-plants show a rough leaf.

21.—Sowed Crop of Carrots, White & Green Coss-Lettuce, & common radishes in Turner's Garden. Headed-down the limes in the Butcher's Yard; & took several Cuttings from the Weeping-willow & planted them in the Nursery.

March 22.—Sowed the Clover in the wheat; & mixed with it the white-Dutch-Clover that had been in the House two or three Years.

Sowed 40 of the Murdoch Myddleton's white-Cucumber-seeds in the seedling-bed. Bed heats very well.

23.—Raked, & weeded the Asparagus-beds.

24.—Sowed 20 seeds of prickly Cucumbers just come from London.

26.—Cast six loads (dung-carts) of hot dung in the field-garden for the cucumber-bed. Planted Quart^r. of Hund: of Cauliflowers in a well-dung'd plot in the field-Garden: from Preedy at Farnham.

March 28.—Made a very stout Cucumber-bed five feet wide, two feet & half deep, & thirteen feet long for three lights, with the six loads of Dung: cut very deep holes in the middle of each light, & rais'd a hillock of fine earth to receive the plants: cut also a trench at the back of the frames, & plunged 12 pots to the brims to receive the melon-plants.

Sowed nine more basons of double-upright Larkspurs in the border in the new-Garden against the street.

31.—Planted the plants of Cucumbers in the new bed, three in an Hole: they show each four leaves; but have not grown much for some days past.

Bed gives a very strong Heat.

Planted a Quart of marrot-fat-pease in three rows in the field-Garden.

April 1.—Planted-out twelve pots of melons: five with yellow-seeded Cantaleupe plants, old seed from Waverley, with one D^o. new seed of my own saving in the same pot: three with new Yellow D^o. three with White-seeded Cantaleupes, old seed from Waverley: & one pot with Dutch-Cantaleupe from Holland, never sowed in England. Left six Selborn Cantaleupes, & two Zatta-plants in the seedling bed.

Mem.—To soak the earth *well* beforehand with water, or else the fine earth is very apt to crumble away, & leave the roots naked in moving.

2.—Sowed two or three white Cantaleupe-seeds in each of the pots that contain the white Cantaleupe plants.

Sowed a good Quantity of the old green Cucumber seeds; & D°. of Middleton's White D°. in the one-light Cucumber-frame.

The former sowing of Middleton's white Cucumber-seed, & of the new green D°. from London came-up wretchedly.

Sad wet, cold weather, & constant high winds (some of them very terrible, & mischievous ones) for three weeks past.

New Cucumber-bed heats well; & Cucumber, & melon-plants have struck-root already.

April 5.—Sowed a Crop of leeks, beets, parsneps, turnep-radishes, & onions.

Unusual Hot weather this week: during which, John, who was but a very young Gardener, scorch'd up, & suffocated all his forward Cucumbers: & drawed his melon-plants, but has not spoiled them.

21.—Snowed very hard for sixteen hours: the greatest snow that has fallen this Year; & must have been a foot deep had it not for the greatest part melted as it fell. Went away without any frost, & seems to have done no damage.

April 23d.—Made the melon-bed for the six large lights, & two of the small ones, with 18 dung-carts of dung, just 30 feet long, & about two & half high, & all above ground.

25.—Dressed the border against Parsons's & sowed in it, Sunflowers, Candy tuft, Venetian-poppy, & Venus looking glass: sowed large plot of savoy seed, plot of Sweet William-seed, & some rows of sorrel, & parsley. Sowed some Celeri on the melon-bed between the frames; & some white-seeded Cantaleupes for the paper-House in one of the large lights.

On examination it appeared that the earth in the Cucumber-bed was burnt by the fierce heat of the bed: dug it out of the basons, & put in fresh: One bason of the early Cucumbers will recover, the other two must be new-planted.

My Polyanths, which I raised from seed given me by Mrs Snooke, & sowed last spring, make now a most beautiful appearance; many of them have large upright stems, producing many flowers, which are large, beautifully striped, & open flat. Mark'd the finest blowers with sticks, intending to save seed from them.

April 26.—Turned-out five pots of Waverley Yellow-seed Cantaleupes, & one Selborn Do into my six great Lights: and only *one* pot of John Bosworth's Dutch Cantaleupe into the middle of my *two light* frame. All the pots were turned-out well except the Dutch-Cantaleupe, whose earth stuck to the pot, & pull'd-off many of its fibres. Sowed Crop of Borecole green & red; & vast plot of Holy-oak-seed: & a row of tree-mallow seed.

April 26.—Sowed four rows of dwarf white Battersea-kidney-beans in the New Garden. An handful of beans left out of one pint. Ground in good dry order.

Supplyed the two basons of Cucumbers that were burnt, with some white, & green prickly plants.

May 9.—Made an Hot-bed for my melon-paper house with four loads of dung joined-on to the former bed.

Made hot-bed for seedling-annuals with three barrows of weeds, & four of dung.

Early Cucumbers show nothing but male bloom.

Planted two rows of large white Dutch-Kidney-beans.

10.—Sowed Annual-bed with African & French Marrigolds, Marvel of Peru, Gourds, & double China-Asters.

Sowed some rows of Sunflower-seed.

Plants shew some few Cucumbers.

Some of the melon-plants decaying in their seedling-leaves: turned-out some more pots into the basons. Shall save but one Waverly melon-plant; all the rest Selborn seed, except the two White-seeded plants under the paper, that are Waverly.

May 12.—Sowed an Hand-glass on ye cold ground with several sorts of white Dutch-Cucumbers; & a few green prickly Cucumrs. Sowed a late Crop of green, & white Coss-lettuce. Prick'd-out some rows of Capuchin-Lettuce.

13.—Earthed-up the melon-hillocks for ye first time with Dorton-earth.[1] The reason that ye first melon-plants that were turned-out did not succeed, seems to be, that the earth in the pots was press'd down too hard, so that the fibres could not push thro'. Laid-on the hillocks upon the new-made melon-bed; & put-on the paper-house. Earth'd the forward Cucumbers, & water'd them all over.

May 16.—Pinch'd, & turned-out two pots of white-seeded Wav: Cantaleupes under the paper-house: the bed very hot. The plants strangely rooted for their age. One of the plants under the two-light-frame has got a runner with two joints.

18.—Mended-out the Artichokes that were decayed with some plants from Johnson's. Very hot, sunny weather: no rain for five weeks; the ground very much burnt.

20.—Pinched one of the melon-runners at the third Joint. The weather full fierce for hot-beds under Glass.

May 23.—Earth'd melon-hillocks the second time with garden-mould, which had been turn'd & prepared on purpose, & is in excellent order. The melon-plants in general weak, & puny: pinch'd some of their runners at the second & some at the third Joint according to their strength.

Sowed three rows more of large Dutch-Kidney-beans in the field-garden: the sowing of White dwarf Do. seems to be rotten in the Ground, notwithstanding the great dryness of the Ground.

24.—Sowed an other Hand-glass with white-Dutch-Cucumbers in the cold Ground.

26.—Planted 200 of Cabbage-plants in the Field-Garden.

27.—Earth'd-up the melons under the paper-house the first time: the plants thriving.

May 29.—Cut first Cucumber. Several more set. Fine soaking shower after six weeks drought.

June 1st.—Prick'd-out first bed of Celeri: & transplanted from their seedling-bed a large Crop of leeks. Ground thoro'ly moisten'd by a long gentle rain.

[1] "In these days we think the earth from Selborne Hill is preferable to that from Dorton for gardens."—[H. M.]

2.—Planted-out the natural Cucumbers under the hand-glasses. Planted some varigated Gourds in the Corner near the Brew-house-Door. Sowed a row more of large French-beans in the field-Garden.

3.—Widened-out the early Cucumber-bed with the dung of the seedling-bed, & laid-on a good depth of stiff earth.

6.—Sowed five rows of dwarf white-kidney-beans in the new-Garden, where the early crop fail'd. Soak'd the beans over night in water, the weather & ground being extreamly dry.

June 7.—Tyed-up a few of the best Coss-Lettuce: a fine Crop.

Several of the melons show bloom, but are very weak in vine.

Earth'd-up melons the third time.

Weeded & thinn'd-out Carrots; a good Crop.

10.—Earth'd up melons the fourth time: the boxes almost full of earth. Extream dry weather. Melons mend by a more frequent watering.

11.—Staked the Holy-oaks in the Garden, & Butcher's Yard, & tyed them up.

Water'd melons pretty much at a distance from their stems. Great drought. Melons shew fruit. They, & Cucumbers require constant shading from y^e^ fierce heat.

13.—Prick'd-out second Crop of Celeri in Turner's Garden.

Earth'd-out the melon-frames with their full depth of earth; & watered them well. Extream hot weather. Melons improve every day, & shew several fruit; but are still scanty in vine. Those under the paper-house thrive well.

June 17.—Gathered first pease.

19.—The Coss-lettuce, that were tyed-up, well-grown, & finely blanch'd.

20.—Lined-out the melon-bed with 18 Dung-Carts of Dung, & earth'd it the full depth within, & without the boxes. Bed 13 feet wide, & contains 40 loads of Dung. Plants under the boxes still, but weak; those under the

paper-house very thriving. Gentle rain : the ground before burnt to ashes.

21 : 22.—Prick'd-out about 650 savoys; & about 230 Bore-cole-plants.

24.—Buried the stones, & rubbish from ye Butcher's in the Yard to make it sound. Dry, scorching weather.

June 25.—Watered melons well : burning season, & no signs of rain. Fruit in plenty ; but none set.

27.—Earth'd the melon-bed still deeper on account of the extream Heat ; & pull'd the Lights quite off for the whole day, & covered the frames with mats. Plants draw very long without any fruit setting.

Cucumbers raised in the cold ground very forward, & thriving.

28.—Planted several Basons in the field with Sunflowers.

30.—Sowed a plot of Endive, & shaded it with a mat.

July 5.—Pull'd up the two melon-plants in the two-light-frame, which had never showed a fruit so far as to blow ; & planted in their room two Selborn Cantaleupes sown about the 21 of May, just shooting into runners. Drought continues ; & the Garden suffers greatly.

July 16.—Planted-out, after waiting five or six weeks for a shower, the Af : & French Marigolds, & double-China-Asters, in the midst of an unusual drought : the Earth quite dust spit-deep.

17.—Gathered first natural Cucumber from a seed put into the cold Ground the 12th of May.

20.—Great tempest of thunder & lightning, & vast rains after 13 weeks drought.

Frequent showers till the 15 of August ; then sixteen days wet, & very bad Harvest weather.

August 22.—Found on my return from Sunbury six brace of moderate-sized Cantaleupes ; & about the same number of small ones, that will ripen, if the season be favourable. No fruit would set till the rains came, & the intense heats were abated : & what did set was all on the third wood, the second casting its fruit, & drawing very weak.

Planted-out in my absence near a thousand savoys, & a large plot of Borecole; was sown a pound of spinage, mixed with turnep-radishes, & lettuce of many sorts: & trench'd out eight good rows of Celeri. The Pyram: Campanula in beautiful bloom; but has only two stems.

Aug. 29.—Planted-out 43 Holy oak-plants before & behind the melon-screen, & in the border of the New-Garden against the street.

*Septem*r. 17.—Tyed up about 25 Endives: they run very small this Year.

18.—Cut first Cantaleupe, a small fig-shap'd one, & not thick-flesh'd. The leaves of the plants unusually decayed.

*Septem*r 19: 20: 21: 22.—Slip'd & new-planted the pinks in the Borders against the House: dug-up the Crocuss, & planted them in double-rows before the pinks; they are encreased to near 500 roots: slip'd the best of the Polyanths, & planted them in two rows in border against the broad walk: planted a border of seedling Sweet-Williams against Parsons's Yard: planted three rows of green-Capuchin, & Brown-Dutch-Lettuce the length of the melon-ground on a border just under the rush-screen to stand the winter: planted several Basons in the field with Sweet-Williams: took-up the yellow-lilys & a fine large Martagon under my Father's window, & planted them in a bason in the field: the two Xiphiums were encreased to a great number; planted some of them in the Basons round ye lilies; & some in a row under my Father's window: planted my Tulips in the same place; & a few Ranunculus, & Fritillarias: planted a row of Crocus-roots on each side as You go out of the new Garden.

*Septem*r. 27.—Put nine Hyacinths to blow in the Glasses over the Chimney. They were given me by Mr. Trinley & brought me by Mrs. Mulso.

28.—Planted a row of Sweet Williams, & a row of Polyanths under the back of the melon-screen: some Polyanths along the dark walk in the orchard.

Delicate Autumn-weather, & no rain for more than a

month. Roads perfectly dry, Cantaleupes come-in apace: very high-flavoured, but small; as they were all on the third wood. The white-seeded sort very good.

*Octob*r. 1 : 2.—Cut two very high-flavoured Cantaleupes, both under two p^{ds}. in weight. They were very weighty for their size; & their coats very black, & embossed. Sent them to Lord Keeper.

11.—Tyed-up second tying of Endives with red yarn. Earth'd-up three rows of Celeri quite to the top.

Cut three Brace of Cantaleupes for Mangoes, that were too backward to ripen. Left two brace & half that may ripen tolerably well, if the season favours.

*Octob*r. 16.—Received from my Broth^{r}. Thomas 50 double snow-drop-roots; six very large double Narcissus-roots.

17.—Set three of the largest Narcissus's to blow in sand.

17.—Sowed a large quantity of Laurel-berries in all the gaps of the Hedges; down Baker's Hill; at the top of Turner's Garden; & in the New-Garden against the street. Berries very large & ripe, from M^{r}. Bridger's.[1]

*Octob*r. 24.—Planted in the Basons in y^{e} Field five double rockets, six scarlet Martagons, six Fraxinellas, 3 tallest purple Asters, 3 dwarf D^{o}., 2 German Goldylocks, 6 double Sunflowers, 3 tall smelling Sunflowers, 2 Carolina Sunflowers; from Murdoch Middleton. In the broad borders under my Father's window; 6 Solomon's-seals, 6 double Narcissus's from Mur: Middleton: several double rockets from M^{r}. Budd; striped Epilobium in the field.

Put two Jonquils to blow in the Glasses; & changed some of the Hyacinths that did not thrive for some of M. Myddleton's.

26.—Finished digging-up a new piece of Garden-Ground 60 feet by 30 in Bakers-hill beyond the Field-Garden.

*Octob*r. 27.—Sowed a large Quantity of Elder, Buckthorn, & dog-wood-berries in the ditch by the sand-walk.

28.—Planted seven rows of small, early Beans in Turner's Garden.

[1] A yeoman farmer at Oakhanger.—[H. M.]

Took away the two three-light frames.

The Ground very dry, & in fine order.

29.—Planted 30 snow-drops in three Clusters under my Father's window. Turn'd-out double Dunged, & earthed the Asparagus-beds.

30.—Cut a melon; tolerable for the season.

31.—Turn'd-off the earth from the melon-bed; & cut two brace of unripe fruit.

*Novem*r. 1.—Planted in the Border next ye street 24 tulips from Mr. Budd: 12 Hyacinths from Do., 5 Hyacinths from Murdoch Middleton: 12 Jonquils from Do., 8 Narcissus's from Do., 2 Dutch Narcissus's from Bro. Thomas: & two Groups of fox-gloves from Mr. Budd. Trenched the border well with lime-rubbish; & put the roots into the Ground in fine dry order.

Planted in a double-trench'd plot of ground five rows of Horse-radish 10 inches deep.

Planted several slips of Mich: Daisies round the basons of Golden-rod; & in the new-planted basons of double-perennial-sun-flowers.

No rain for many weeks, & the ground as dry as in Summer.

Cast the Dorton melon-earth, & mixed some rotten Dung with it.

*Nov*r. 6.—Cut-up a Cantaleupe that had been cut green, & laid in the Buffet to ripen. It had a very good flavour, & was better than many a common melon ripened in the Height of the Season.

26.—The early beans come-up very well. Mild growing weather as yet.

*Decem*r. 1.—Eat a Cantaleupe that had been a month in the House. It was firm, & well-flavoured.

*Decem*r. 9.—Earth'd-up the Artichokes. Hoed the beans, that are grown pretty tall. Very mild weather 'till this time.

26.—Cut the last Cantaleupe, a very small one & not very good. Very mild weather; hardly any frost yet.

The spring & summer 1757 were remarkably hot &

dry. The dry weather began in passion-week, & continued on without any Interruption (except ye 29 of May) 'till the 20 of July. The air was rather cold in April & May: but the sun, shining all day from a cloudless skie for many weeks, dryed the ground in a very uncommon manner: & the heats of June, & July quite burnt it to dust. I observed that our wet clay withstood the drought very well for many weeks: but when once it was thoro'ly parched (as it was more than spit deep) vegetation suffered more than in the gravelly soils. The barley, oats, and pease, having no rains to bring ym. up, did not yield half a crop: but the wheat (which is never known to be injured by dry weather) turned-out very well. On ye twentieth of July fell a very heavy, & extensive thunder-shower: after which there were moderate rains, that restored a little verdure to the grass-fields. From the 16 of August set-in a very wet season for 15 or 16 days, which made people in some pain for the wheat that began to grow. About the beginning of Septemr. began the most delicate Autumn, & lasted quite into Novemr. with very little or no frost quite to the close of the Year. On a large well-prepared melon-bed I could get no melons to set 'till the great rains fell; all the watering & shading not being sufficient to keep the plants from drawing. By my Brother Barker's account they had seasonable rains in the spring & summer; for their lent-crops in Rutland were very good.

Garden-Kalendar for the Year 1758

Jan. 1, 2.—Fierce black frost; went-off with an heavy rain.

9.—Wheeled into the Cucumber-ground 17 barrows of very hot dung for seedling Cucumbrs.

Earth'd two rows of Celeri.

Very mild, spring-like weather.

10.—Sowed a box of Polyanth-seed of my own saving, & set it under an Hedge where it could only have the morning-sun. Hoed the beans, which are very prosperous, the second time.

13.—Made a deep one-light Cucumber-bed for my smallest frame.

16.—Laid on the earth three Inches thick: it was cold, & lumpish tho' mix'd-up with a good Quantity of rotten dung, & two spade's full of wood-ashes. Matted down the frame very close.

Jan. 17.—Finished an earth-house in the melon-ground. It is worked in a circular shape with rods & coped over with the same, & then well thatched: is nine feet over & eight feet high; & has room to hold a good Quantity of mould, & a man at work without any inconvenience.

18.—Sowed about 40 early Cucumber-seeds of the Year 1752 in the hot-bed. Bed comes to its heat very regularly. Hard frost, & great rime; & no sun for some days. The bed matted down a nights with three mats.

19.—Carryed out three moderate dung-carts of ashes from the ash-house, & sowed on Baker's-Hill, which is now laid for natural Grass; & has been Clover for two Years past: spread also the upper part of it with the dung

out of the melon-bed. Turned all the melon-earth; & mixed it with a good proportion of the Dung of the last melon-bed. Dung hardly rotten enough.

Jan. 20.—Hot-bed works very well. Hard frost for two or three days: now ground covered with snow.

One of the Hyacinths in the glasses seems to promise to blow soon.

22.—On this day which was very bright, the sun shone very warm on the Hot-bed from a quarter before nine, to three quart^rs^ after two. Very hard frost.

24.—Set-up about 20 Yards into the Hanger, in a line with the six Gates, a figure of the Hesperian Hercules, painted on board, eight feet high, on a pedestal of four feet & an half. It looks like a statue, & shows well all over our out-let.

Cucumber-seeds swelled for sprouting, but not up yet: lined the end of the bed next the screen with two barrows of hot dung. Sort of thaw.

27.—Finding the hot-bed scarce powerful enough to heat the three inches of earth thro', which was full wet when laid-on; I took-off the mould half the depth, & put the seeds in again. Some of the seeds sprouted. Sowed about 20 more. Earth very warm towards the bottom.

27.—Planted about 40 Ranunculus-roots, given me by M^r.^ Budd, in the Border against Parsons's, to blow after those that were put into the Ground in October.

29.—Cucumber-plants come-up apace.

29.—On this Day the mercury in the weather-glasses, which had been mounting leisurely for many days, was got one full degree above settled-fair in the parlour, & within half a degree of the same in the study.

My Father[1] who has been a nice observer of that upstairs for full 37 years, is certain that it never has been at that pitch before within that time. Very still, grey, close weather, with the wind at full east, & quite a thaw: tho' there has been somewhat of a frost for more than a fortnight past.

[1] His father, John White, died in October of this year, 1758.—[R. B. S.]

Ground very dry; little rain having fallen for these three weeks past.

Jan. 30.—Mercury continues at the same height. Same still, gloomy weather.

Sent for 42 bushels of peat-ashes from the forest-side. Sowed fifteen bushels on the broad-mead, & 15 bushels on the Ewel-slip. Ashes very dry, & curiously preserved. Laid-up the remainder in ash-house. Brought at the same time an old sand-stone-roller from Mr. Bridger's at Oak-hanger. It was, it seems, formerly the property of Mr. Xmas of Oakhanger, Father to Sarah Xmas; & may probably have been made these 60 or 70 Years; & yet is very little damaged by age or weather.[1]

31.—The Narcissus's, planted in sand in common blowing-glasses, have crammed the glasses so full, that tho' they budded very strongly at first, they have hardly advanced at all since in height for many weeks: one of ye Glasses, that was crack'd by accident, is quite split to pieces by the large, strong roots.

Took it out of the Glass, & planted it in a pint-mug fill'd with sand.

Feb. 2.—Sowed about 20 more cucumber-seeds; the third sowing: the first & second come-up very well, & begin to some greenness.

4.—Lined one end of the hot-bed with one Barrow of Dung. Bed declines in heat. Sowed two samples of white-clover-seed from different Seeds-men, in the Hot-bed.

6.—Backed the hot-bed with six barrows of hot-dung.

Took away the suckers from the filberts against Parsons's; & planted some of them where they have failed against Turner's.

6: 7: 8.—Trimm'd, & tacked ye vines (as much as old neglected trees could be reduced the first Year) according to Hitt's directions. Covered many parts of the wall very well with horizontal wood. Left the disbudding till the

[1] This would be made of what we call "Headley Stone."—[H. M.]

budds are more swell'd. Trimmed ye fig tree, which was full of Young wood, & plies very well to the wall.

Feb. 9.—Put-in about 20 more Cucumber-seeds. Former sowings do not come up well.

11.—One of the Hyacinths in the Glasses blown-out in several of its buds.

Some in the Garden, thro' the mildness of the winter, budded for bloom.

14.—Had 20 bushels of tan from Alton for the Cucumber-bed.

23 : 24 : 25.—Made a cucumber-bed full fourteen feet long, & almost four feet deep, at the back of my two two-light frames with ten Dung-carts of dung, which is very short this year on account of the scarcity of litter ; & was very cold & wet by reason of the vast rains about that time. Covered the dung the space of one of the frames about five inches thick with tan, & filled a deep hole in the centre of each light with the same. Laid a leaden-pipe into the frame that has got the tin-chimney (according to Dr. Hales's proposal), up thro' the back of the bed, in order to convey-in a succession of fresh air a nights.

Made an hot-bed for a single hand-glass for Celeri.

Planted half hund : large, forward cabbage plants.

27.—Planted 100 brown-Dutch, & green Capuchin Lettuces from Bradley that had stood ye winter, in the room of our own, which rotted thro' the wetness of the soil.

28.—Sowed the Celeri-bed.

March 1.—Great flood : wet for a long time.

2.—Laid the hillocks of earth in the middle of each light. No earth fit to have been used, had it not been for the earth-house thro' the vast rains.

4.—Plunged nine melon-pots in the tan-frame, & three in the other frame. Contrived some wodden bottoms to the pots to make the earth turn-out more easily. Sowed plenty of cucumber-seeds in a good depth of earth. Bed comes well to its heat. Sad wet, stormy weather.

March 6.—Sowed one melon-seed from that curious

Selborne *from the* Hanger

Melon brought from Waverly in 1756, in each of the twelve pots.

Bed heats well. Weather still so stormy, & wet, that there is no removing the Cucumber-plants. It has rained of late from all Quarters of the Skie.

7.—Found an opportunity at last to plant-out the Cucumber-plants, three tolerable ones in each Hillock; some of which shew a rough leaf. Bed in fine warm order both in the tan, & dung part.

Sowed two more of the same Cantaleupe-seeds in nine of the pots.

9.—Transplanted a large Laburnum into the Butcher's Garden.[1] Planted half Hund: more Cabbage-plants.

11.—Laid that part of the leaden-pipe, which comes out behind the Cucumber-bed, coiled up in a large box made out of y^e^ seed-box; & filled the box with about two barrows & half of Hot dung. The nose of the pipe comes-out about three inches beyond the box.

March 13.—Planted 100 more Cabbage-plants, in all 200; the rows two feet apart, & the plants one foot from each other in the rows: every other plant to be pulled-up early in the summer.

14.—Melon-plants begin to appear.

16.—Planted Gallon of broad-beans in the lower field-garden, almost seven rows. Sowed pound of spinage, with some common radishes, which ought to have been sowed 5 weeks before, but was prevented by the wet, in the upper field garden. Sowed some Celeriac between the Cucumber-boxes. Sowed eight basons in the field with double-upright-Larkspurs; & the two lowest with large-single-branching D^o^.

Perfect summer for these two days.

[1] The plot of ground on which the Butcher's shop stood in White's time, and still stands to this day, must have belonged to Gilbert, as he evidently did what he liked with it, planting the lime-trees, lopping them, and improving the place generally by the planting of hollyhocks, laburnums, lilacs, &c. Mr. Maxwell agrees with me that this must have been the case, the more so as he can remember that the adjoining cottage was purchased by his father from Miss White.—[R. B. S.]

18.—Earthed-up Cucumber-hillocks the first time. Plants thrive, & many of them shew four leaves. Melons up some in every pot; they look healthy, & grow apace.

March 18.—Turned-out a large Narcissus, that was intended to blow within, into one of the borders. Planted some bunches of single snow-drops in bloom under my Father's window.

Sowed about 30 more green Cucumber-seeds in the Hot-bed. Filled-up the box, that contains the leaden pipe, with one more barrow of dung: the dung begins to heat in the box: the nose of the pipe hot in the morning, & cold towards the evening. Very wet afternoon.

19.—Vast heavy rains most part of y^e^ day.

21.—Great snow all the day, & most part of the night; which went off the next day in a stinking, wet fog. Very trying weather for Hot-beds, more like Jan. than March. No sun for many Days.

23.—Planted among the Holyoaks next the street in y^e^ New-Garden 2 Austrian Briars, 1 black Belgic-rose, 1 York & Lancaster D^o.^, 1 Marbled D^o.^, 1 monthly D^o.^ from M^r.^ Budd: & two large roots of the aster-kind in the Border before the roses. A very late-blowing sort.

25.—Planted three more Provence-roses from M^r.^ Budd in the same place.

Forked Asparagus-beds: dressed Rasberry-bed: sowed the lower plot of the new field Garden with seven rows of marrow-fat pease at four feet asunder. Ground in a cold clammy Condition.

Tryed an experiment late in y^e^ evening with a Candle on the two Cucumber-frames after they had been close covered-up some Hours. On putting the Candle down a few Inches into that frame that has leaded lights & no chimney, the flame was extinguished at once three several times by the foul vapour: while the frame with the tiled lights, & Chimney was so free from vapour that it had no sensible effect on the flame. I then applyed the candle to the top of the Chimney, from whence issued so much

steam as to affect the flame, tho' not put it out. Hence it is apparent that this Invention must be a benefit to plants in Hot-beds by preventing them from being stewed in the night time in the exhalations that arise from the dung, & yer own leaves. The melons confirm the matter, being unusually green & vigorous for their age. I applyed the Candle to the nose of the leaden pipe, but it had no effect on it: so that what air comes-up thro' it must be wholesome & free from vapour.

March 28.—Planted 59 potatoes in Turners; not very large roots. Sowed the wheat with white Dutch Clover: Baker's-Hill with Rye-Grass, & black-seed: the vase-mount, & hollow-way into the Ewel, with Do. Fine weather. Set-up the vases: put-on two bold Handles to the lower one; & two side-pannels to the pedestal. Sowed two rows of parsley, & transplanted some mint.

Unusual sunny, scorching weather for a week past. The heat drew the forward Cucumbers, notwithstanding they were constantly shaded; & would have spoiled the melons (as ye same kind of heat did this time twelvemonth) had not the pots been raised. Forward Cucumbers weak; & begin to shew for bloom.

April 3.—Sowed 14 of John Bosworth's curious large white Cucumber-seeds in one of the frames, in order to raise some plants for one of the Hand-glasses to save seed from.

4.—Sowed almost an ounce of Carrot-seed, mixed with Coss-lettuce green & white, & some common Radishes, in Turner's Garden. Sowed in the field-Garden ounce of onion-seed, half ounce of Leek-seed, & a small Quantity of parsnep-seed.

6.—Made a one-light hot-bed for Annuals with six full barrows of dung.

April: 9.—Very dry weather for this fortnight past: for the last week fierce frosts.

10.—Several basons of sun-flower-seed sowed among the Holy-oaks in the New-Garden against the street; & some amongst the Butcher's Limes. Sowed the annual-

bed with French & African-Marrigolds; Double-China-asters, & single D°. & white Asters; pendulous-Amaranths, & some Gourds for Dame Tyrrel.[1]

9.—Saw two swallows: one was seen in y^e^ village on the 3^rd.^

11.—Sowed in a seedling-bed in the field-Garden Sun-flowers, French-wall-flower, Columbine, Sweet-Williams, Double-China-pinks under two hand-glasses, Everlasting-pea, French Honeysuckle, Evergeen-Cytisus, & Holyoaks: in the new-Garden in the broad-border, & against the apple tree, painted-Lady-pease; Nigella romana; in the Kitchen part half ounce more of Leek-seed, & small plot of red beet.

April 12.—Sowed third Crop of marrow-fat pease, one row in Turner's, two rows in old field-garden, two rows in new field-garden.

13.—Worked-up a nine-light melon-bed with 18 good dung-carts of fresh, hot dung, & 80 bushels of fresh tan. I had made this bed just a week before, only two days after the materials were brought in; but finding it to heat violently I ordered it to be pulled to pieces, & cast back again, that it might spend its violent Heat. The bed is 36 feet long, six feet & an half wide, & about two feet & half high. The tan makes a covering all over of about 8 inches thick. In the middle of each light I laid a patch of rotten dung about two inches thick, which I beat-down hard to keep-off the fierce heat from the hillocks of earth.

Fierce east-wind; & no rain for near three weeks: the ground, & roads unusually dry.

April 15.—Raked-over the Asparagus-beds the second time: stuck the first Crop of Marrow-fat pease: filled the box that contains the leaden-pipe with hot dung the second time.

Cutting winds all day, & thick ice every night.

16.—So fierce a frost with a South-wind as to freeze the steam which run out in water from between the panes

[1] This is the Dame "Terry" mentioned in Buckland's edition, vol. ii. p. 7, who was said to be so well acquainted with Gilbert White.—[H. M.]

of ye Melon-frames into long Icicles on the Edges of the lights.

17.—Prepared & dunged the basons in the field, which are to be planted with Annuals hereafter. Fine shower.

18.—Put a barrow of fine mellow earth into each melon-light. Bed seems now to be very mild. More soft showers. Earth-house of great Use to keep a constant supply of fine mould dry & ready for the frames.

April 20.—Found the melon-hillocks so hot that I durst not turn the plants into them: plunged the plants in the pots into the hillocks.

Turned-out some Hyacinths that were out of bloom from the blowing-glasses into the flower border.

Sowed Crop of Boorcole green, & red. Polyanths in full bloom; but not so fine as last Year. Several Hyacinths in the border very large & handsome. White & yellow Narcissuss with golden Cups blow very well both in glasses & abroad.

21.—Found the melon-bed so hot still that I did not trust the plants out of the pots. Earthed the bed all over an inch thick to keep down the steam, which in the night had spoiled three of the plants. Bored some holes very deep in the back of the bed to let out the violent Heat. I find a moderate thickness of tan, when laid on a good strong bed of dung, to occasion a very dangerous, & unequal Heat, so that there is scarce any Judging when the earth is free from burning. For in shady weather it will appear very mild; but on a hot morning will rage again as fierce as when it first came to its full heat. Tan gives a mild & lasting heat by itself, but does not seem suitable with dung.

22.—Took-out the tan the whole depth as wide as the Hillocks, & mixed-up the hillocks with a little fresh earth. Did not find the earth burnt but much too hot. Filled the space whence the tan came with barrows of rotten dung trod down very hard, about four Inches thick.

Sowed four rows of dwarf kidney beans, the white sort; & a crop of Savoy-seed. Perfect Summer weather.

April 24.—Ventured to turn-out ye Melons, tho' some of the hillocks were full hot: mixed-up a good deal of fresh earth in each hillock, & set ye plants as high as possible: left the wodden bottoms under some of the plants to see if they will prevent the roots from burning. Intend to cover the frames but slightly, while the bed is so hot.

Made an hot-bed for the smallest one-light frame, to prick the annuals in, with 5 barrows of dung, & two of Grass. Made two beds for two hand-glasses with two barrows of dung each to forward some of Bosworth's large white Cucumbers to save seed from. Dressed Artichoke bed. Forked up ye seedling Asparagus; only 16 plants to be found. Layed some boughs of Laurustines; & planted a Laurustine by ye pitching.

April 27.—Planted-out John Bosworth's large white Cucumbers, three under each Hand-glass, to make early plants to save some seed of that fine sort from: pricked-out the annuals in ye two one-light frames, & sowed some more Afr: Marrigolds, & more of Bosworth's Cucumber-seeds. Weeded all the basons & flower-borders. Melon-bed steams greatly; but seems to be past its vehement Heat.

Fine soft showers all the Afternoon, & evening.

Disbudded the vines that were laid on the walls according to Hit.

May 1.—Planted about 20 bulbs of Eschallots in the New-Garden.

Some melon-plants continue to fail, tho' the bed is very mild, & the mould sweet & unburnt.

12.—On my return from London I found several of the melon-plants very large & thriving; except in two of the basons, where they were puny, & withered: supply'd those two basons with some late-sowed Cantaleupe-plants from Seed saved at Selborn 1755.

May 15.—A most extraordinary dry season ever since the end of March: all our worst roads have been dryed-up many weeks. For this fortnight past the heats have been

very great. Grass & lent-corn must suffer unless rain comes soon. Apple-trees finely blown. Bosworth's Cucumbers come-on well under the Hand-glasses.

17.—Widened-out the Cucumber-bed four feet with the dung of the seedling-bed; & laid-on a thick covering of earth.

Prick'd-out a good plot of Celeriac. Vines trained according to Hit full of Bloom.

20.—Sowed a Quart, four rows, of large white kidney-beans in the field-Garden: watered them well beforehand. Earthed the melons, & watered them stoutly: trod the earth round the stems down very hard to keep-out the heat. Planted four Hand glasses in the cold ground with M^r. Bosworth's large white Cucumber-plants raised in the annual-bed. Very hot, dry weather. Sowed some Cucumber-seeds under a hand-glass.

May 22.—Prick'd-out a plot of Celeri; sowed a Crop of Coss-lettuce green & white.

24.—Made a melon-bed for four Hills with six loads of dung in front of the large bed: it is five feet wide, and seventeen long.

25.—Turned-out a pot of Selborn Cantaleupes into each Hill, & covered them with Hand-glasses. Intend to cover the plants, when they spread, with the two two-light frames. Violent hot weather: no rain for some weeks. The ground burnt, & cracked to an unusual degree. Things in both fields, & Gardens suffer greatly. The fierce heat has lately damaged both melons, & Cucumbers, notwithstanding constant shading, & unusual watering.

May 26.—Planted 6 basons in the field with Indian-pinks: set the plants pretty near together. Fine soft rains all day: everything greatly refresh'd after so tedious a drought. Sunny days & east winds for the most part ever since the last week in March.

29.—Weeded the Carrots, & Laurels, & hoed the potatoes: weeded the seedling-flowers. Tacked the Young wood of the vines all perpendicular, for the first time, according to Hit.

30 : 31.—Raised & earthed up the melon-frames almost their full quantity. Melon bed very warm still. Many of the melon-plants very thriving; abound in vine, & shew male bloom, & fruit.

Planted 100 of late Cabbages; & pricked-out some Broccoli plants given me by M^r. Budd. Shady moist weather for a week past: now frequent heavy showers that have well soaked the Ground down to the roots of Corn, & Garden-stuff.

June 2.—Sowed four rows of large white-Kidney-beans, & one of dwarfs in y^e field-Garden: five rows of Dwarf D^o. in the Quincunx.

3.—Gathered first beans.

5.—Cut a brace of Cucumbers. Shady moist weather.

6.—Earth'd the hand-glass melons the first time: the bed not earth'd all over yet. The plants are strong, & produce plenty of wood; but are strangely blistered in their second leaves by being exposed to y^e fierce sun while the night-dew was on them.

9.—Mulberry-tree shews several Blossoms for the first time. Fine summer-weather with now & then a shower. French-beans that had been watered all night, & were sown on the 2^d of June, began to appear on the 8^th.

9.—Raised the Cucumber-frames the thickness of a brick above the mould: turned down y^e large white-Cucumbers from under the hand-glass; they are strong plants, & shew fruit.

June 10.—Went to raise the melon-frames, but found the melon-roots have extended themselves all along against the sides of the boxes, & require room by lining.

Watered the Mulberry-tree well to make the fruit set.

12.—Gathered first Marrowfats.

Soaking rain for ten Hours.

13 : 14.—Lined the melon-bed three feet on each side with eleven loads of dung; & laid-on a good depth of earth: raised the frames to the top of the earth. Lined the ends of the bed with one load of Dung: the bed is now full 40 feet long, & 12 feet wide. Earth'd it deep as

far as the earth would last: run a slight hedge[1] round the edges to keep up the earth.

15.—Earth'd the Hills of the melons under ye Hand-glasses: stop'd some of the plants at the third Joint: plants very vigorous.

Sowed Crop of Endive.

Soft showery weather.

June 15.—Prick'd-out 600 Savoys, & 350 Boor-cole-[2] plants, green, & purple.

16.—Planted-out all the leeks at six inches asunder: about 200.

Pricked-out a little more Celeri.

Planted out a bed of small Coss-lettuce.

Sowed a row of parsley.

Wet, blowing weather.

17.—Planted 100 Cabbage-plants in the room of those planted May 31st, which were dead.

Tyed-up first Coss-lettuce.

Some of John Bosworth's long Cucumbers set.

20.—Planted-out the greatest part of my annuals, African & French-Marrigolds, Pendulous Amaranths & China-Asters: They were pricked into a second bed, & are very forward, & large.

Pricked-out an 120 Roman-Broccoli-plants from Waverley.

Two Labourers have been working for 5 or 6 Days in the Garden, & have hoed & weeded all the Crops, & cleaned all the paths, & borders that were in a foul Condition.

22.—Planted more Annuals, Sunflowers, & China-Asters, in field, and Garden.

27.—Nailed, and trimmed the vines: the second time, according to Hit. The bunches in full bloom.

28.—Earthed the hand-glass melon-bed the full depth, took away ye hand-glasses, & put the two two-light frames over the plants. Plants strong, but shew little fruit, or bloom.

[1] Probably a low rod hedge of split hazel.—[H. M.]

[2] Borecole.—[H. M.]

Planted some of Murd : Middleton's[1] white-Cucumber-plants under three hand-glasses.

July 1.—Stuck the sticks to the large kidney-beans. Heavy thunder-showers.

Melons swell apace. The late bed shews fruit. Dwarf kidney-beans in full bloom.

3d.—Lined-out the two-light melon-bed a yard wide with three loads of dung, & laid-on earth very thick. Prick'd out a good many Sweet Williams. Planted out more annuals : sowed a small spot of Endive.

July 4.—Pricked-out bed of Holy-oaks to put them in less room : pricked-out vast Quantities of Sweet Williams.

Blowing, wet weather on to the 14 : when there was quite a storm all night, & such quantities of rain as made quite a flood : the trees and flowers were much damaged by the wind.

15.—Found on my return from Dene about thirteen brace of Cantaleupes set ; some very large. Plants in vast vigour with leaves near a foot in Diameter. More fruit setting every day. Those plants in the two-light frames seem to be full late ; hardly any of their fruit blown-out yet. Two plants in new frame have 8 brace of fruit between ym.

18 : 19 : 20.—Showery, black weather. Trenched-out seven rows of Celeri. Planted-out second plot of Endive : first plot about a fortnight before. Planted large plot with Roman-Broccoli from Waverley. On examination it appeared that the Cantaleupe-fibres have run the full extent of the 12 feet bed : laid on some more earth behind to secure their Roots from the Sun. Some of their branches, on which are large fruit, are attacked with mouldiness this wet weather. Raised the frames behind, the thickness of a Brick, to shoot-off the rain, that drips thro', & rots some of the Haulm.

[1] Murdoch Middleton seems to have been a very second-class nurseryman, as his plants appear to have failed on more than one occasion, or they were wrongly named, &c.—[R. B. S.]

21.—Quite heavy showers to day, & strong wind. Some of the melon-leaves measure 11 inches and three Quart^rs. in diameter.

20.—Gathered first French-beans; white dwarfs.

24.—Stringed[1] pine strawberries.

Continual showers.

25.—Dug-up Hyacinth, & tulip-roots: Hyacinths bloated with the wet weather. Planted in their room African & French-Marrigolds. Vast rains still.

26.—Great rain.

28.—Vast rains with Thunder.

29: 30.—Dry weather: on 31^st rain for 14 hours. The melon-vines suffer with the continual wet, which has continued now more than a month. Cut-off a full-grown Cantaleupe that was rotten.

August 1.—Black, moist weather all day; vast rains at night.

2.—Sultry, bright morning: turned the large Melons.

3.—Tiled, & turned all the largest melons: full twenty brace set; tho' perhaps they may not all ripen.

4.—Sowed half pound of spinage, & some white-turnep-radish-seed in the new field-Garden: began planting-out savoys, & Boorcole. Two hot, bright days.

5.—Cut-off the small side-shoots from the bearing wood of the vines, leaving one joint on; according to Hitt's directions. Grapes pretty large. The fourth hot, dry day.

7.—Drawed-out the boorcole, & savoy-bed to a foot & half apart, & planted the new field-Garden with D^o.

8.—Brought in a doors the Pryamidal Campanula: it has seven Stems, & just begins to shew some bloom.

Aug. 11.—Trenched two long rows more of Celeri. Vast rains the two days before.

12.—Finished the hay-rick: hay-making was in hand just seven weeks. A deal of Hay much damaged.

13.—Beautiful harvest-weather.

16.—Tyed-up some of the forwardest endives. Vast rains last night, & this evening. The wheat is all cut, &

[1] *i.e.* tied them up, as was the method in those days.—[H. M.]

must soon be damaged if this weather lasts. It has never been dry more than four days together, & that only twice, since the first of July: in general only two days together; & that but seldom. The Cantaleupes have had a very disadvantageous season; nothing but black, wet weather since they have been set. S^r. Mat: Featherstone's Cantaleupes, I hear, have very little flavour.

19.—Earth'd one row of Celeri half the way up.

Planted a row of Savoys between every two rows of dwarf-kidney-beans in the Quincunx. Housed the wheat not in very good order.

Aug. 21.—Tyed-up more Endive.

22.—Cut the first Cantaleupe, the largest of the Crop: weighed 3 p^ds. 5 oun: & half. It proved perfectly delicate, dry, & firm, notwithstanding the unfavourable weather ever since the time of setting. Saved the seed.

23.—Cut second Cantaleupe: weighed 2 p^ds. 5 oun: Fine, bright weather for five days.

24.—Cut a brace more of Cantaleupes; one weighed 2 p^ds. 6 oun: one 2 p^ds. 4 ounces. Great rain in the afternoon.

25.—Sent a brace of the Cantaleupes to Lord Keeper: eat the third at Home, which turned-out perfectly delicate; rather superior to y^e first, eaten at the Hermitage. Saved the seed.

26.—Cut & set-up in the sun y^e six large white seed-Cucumbers: the biggest weighed 2 p^ds. 14 oun: & the longest measured 13 inch: in length.

Sowed a small plot of Coss, green-Capuchin, & Brown-Dutch-Lettuce-seed for plants to stand the winter.

28.—Cut small Cantaleupe, weighed but 15 oun: vast rains all day, & a great flood.

29.—Tyed-up about 30 more Endives.

31.—Heavy rain for about 30 Hours, which coming upon the back of such vast showers before, occasioned an extraordinary flood, which ran over the foot-bridges, & was greater than any winter-flood for many years past. It filled James Knight's biggest pond, which had been fished

this summer brim full:[1] & raised the Landsprings in ye fields, so as to damage the paths.

Septemr. 5.—Earth'd-up early row of Celeri to the top.

Eat a brace of Cantaleupes at the Hermitage: the black, rough one very high flavoured. Shady, showery weather. Saved the seed.

Pulled-up the Onions, & Eshallots, & laid them to dry. Onions begin to rot with ye wet.

7.—Eat a very delicate Cantaleupe: it had a bottle-nose, & grew close to the stem. Sav'd ye seed. Shady, showery weather: now a vast rain.

Septemr. 8.—Cut first Endives.

Vast rains still.

9.—This day ten weeks the wet season began.

10.—The Cantaleupes threaten to come all together. Cut two brace, & half to day.

12.—Held a Cantaleupe feast at ye Hermitage:[2] cut up a brace & an half of fruit among 14 people. Weather very fine ever since the ninth.

13.—Planted-out two rows of Polyanths down the border next Lasham's. Should have been transplanted many weeks ago, if the wet weather had not prevented.

14.—Eat a brace & half of Cantaleupes.

[1] Mr. Maxwell has taken great pains to identify the various localities mentioned by Gilbert White. Seeing that this "Kalendar" was written nearly 150 years ago, and that many of the families, such as the Kelceys, the Berrimans, and others, have become extinct, or have left the village, this has been no easy task. Mr. Maxwell, however, has interviewed many of the oldest inhabitants, and has thus identified many places which I myself should never have managed to do. In the present case, for instance, he has found that James Knight's ponds were at Coneycroft. They were the old fish-ponds belonging to the Priory, where the stock of Carp, Tench, &c., were preserved. They are now dry, or only hold a little water after heavy rains, such as we had at Selborne in the first week of November 1899, when Mr. Maxwell found the record of the week to have been five inches.—[R. B. S.]

[2] Mr. Grant Allen in his map of the village gives the site of the "Hermitage" as outside the "Zigzag." Mr. Maxwell tells me that his father spoke of the Hermitage as being on the Bostal, which is much more likely to be correct, as it would be close to White's property. Mr. Grant Allen places the "Alcove" where local tradition assigns the site of the "Hermitage."—[R. B. S.]

Saved the seed of one that grew near the stem, & was very fine.

Tyed-up more Endives.

17.—Had been dry for 8 days: now very wet.

18.—Cut a Cantaleupe from one of the later plants: weighed 2 p^{ds}. 5 oun:

Esteemed very curious: saved y^{e} seed.

Septem^{r}. 26.—Earthed about half way seven rows of Celeri.

27.—Cut two Cantaleupes, & took away two of the frames: only one fruit remaining. Dug-up the Carrots, & Potatoes: the potatoes not a great Crop, nor very large. Dry, pleasant weather.

28.—Continued the dug-ground down Baker's Hill for more Garden. Dug a border down the shrubbery under the rod-hedge.

Octob^{r}. 2: 3.—Chip'd the best of y^{e} Polyanths in y^{e} broad shady walk, & planted two rows again in the same place.

4: 5: 6.—Planted three beds of Pine-strawberries, & two of scarlet D^{o}. in the New Garden. Planted a few large strawberries called Collinson's. Nova Scotia, & white Strawberries sent me by Brother Thomas.

6.—Cut last Cantaleupe; & housed the frame very dry. Firm, good-flavoured Fruit.

Octob^{r}. 8.—Fine still weather in general since the 9th of Septem^{r}.: now rain, & a vast storm of wind, that blew-down some shrubs, & beat to pieces all the flowers.

17.—Transplanted about 100 Green Capuchin, & Brown-dutch Lettuce to Dame Tyrrels Garden to stand y^{e} winter. Dressed the border at y^{e} back of y^{e} melon-screen, & planted a row of Sweet Williams: planted a row of D^{o}. in the border in the New-Garden against y^{e} Street.

21.—Received from Mur: Middleton 12 double blue Hyacinths, 12 early blowing tulips, 6 Polyanth-Narcissus, 6 double white-Hyacinths, Quart^{r}. p^{d}. of Anemonies, 50 good Ranunculus, two Moss-Provence-roses.

21.—Planted the two Moss-provence roses behind the border next y^{e} street in the New-Garden. Put to blow

in the Glasses 3 double blue, & double white Hyacinths; & one early Tulip.

*Octob*r. 27.—Slip'd-out the buds of the Pyramidal Campanula, which blowed this Year, & planted them in several pots, four in a pot.

*Nov*r. 2.—Saw a very unusual sight; a large flock of House-Martens playing about between our fields, & the Hanger. I never saw any of the swallow-kind later than the old 10: of Octobr. The Hanger being quite naked of leaves made the sight the more extraordinary.

Warm wet weather for many days, with blowing nights, & sunny mornings.

The leaf fallen more than usual.

*Nov*r. 8.—M: Middleton's large late Aster just blowing: a fine showey flower of a beautiful purple.

8.—Set to blow in Glasses four Polyanth-Narcissus, & two Hyacinths brought me by Brother Thomas.

14.—Planted in the Butcher's Yard between ye limes one white, & two purple lilacs.

*Novem*r. 16.—Planted in broad border next Parsons's:

No. 1. Double blue Hyacinths.
„ 2. Do. White.
„ 3. Early tulips.
„ 4. Quarter of a pound of Anemonies.
„ 5. 50 Ranunculus.
„ 6. My own Hyacinths.
„ 7. My own Tulips.
„ 8. Bro: Tho: Polyanth-Narcissus, & Jonquils: some have been in Glasses.
„ 9. Mr. Budd's Ranunculus.
„ 10. Mur: Middleton's Narcissus.
„ 11. 16 Coronae Imperiales.
„ 12. Mr. Budd's Narcissus.

The border very dry, & in very fine order.

Nov. 20.—Planted four Damascene-plum-trees from North Warnboro'.

Nov. 24.—Set-up two wickets from ye upper end of my Ewel-close thro' Parson's field to the pound-field.

Planted 9 long rows, 3 pints of early beans, in the field-garden Ground in very dry, good order.

25.—Trenched & dunged very stoutly a piece of Ground for melon-earth next spring.

*Decem*r. 14.—Earthed-up Artichokes.

The spring, & Summer of 1758 were much in the extreams. From ye last week in March to the first of July was one long dry fit, with very few showers between. At one time, I think, the Ground was more scorch'd than even in summer 1757 : & the lent-corn began to suffer greatly. But on the 1st of July the great rains began to set-in, & continued with very little intermission till the 10 of Septemr. The Autumn was moderately dry, & pleasant ; & continued very mild, one short frost excepted, to the end of ye Year.

Garden-Kalendar for the Year 1759

Jan. 19.—Wheeled-in, & cast 18 barrows of hot dung for the seedling-Cucumber-bed.

20.—The season has continued uncommonly mild to this time. Many kinds of flowers are got above ground some weeks before their usual time: the snow-drops, & some Crocus's were in bloom before old Decem^{r} was out: & Farmer Knight complains that several of his turneps are in blossom.[1]

Covered the tulip, & Hyacinth-buds with a thin coat of tan that is rotten.

Have got some mould in excellent order for the early Cucumbers; it is a mixture of strong loam, ashes, & tan, tumbled about & well incorporated all the winter.

The Glass has been very high for many days with a falling mist, & a blustering west-wind.

Jan: 22.—Turned the earth trench'd for y^{e} Melons, & gave it an other sprinkle of very rotten dung: turned the Dorton-earth, & mixed with it three barrows of rotten tan.

23.—Made the Cucumber seedling-Hot-bed turning the fronts to the south-west to take all the sun these short days. Hard frost for two nights, & bearing Ice.

24.—Laid-on the mould on the hot-bed; fill'd & plunged four pots for Cucumber seeds. Sowed a pot with Cucumber-seeds, & set it by the parlour fire for experiment-sake. These seeds came-up, but would not advance beyond the two first leaves.

26.—Bed come a kindly heat: sowed above an 100 Cucumber-seeds within & without the pots.

[1] These turnips had certainly got extraordinarily forward.—[H. M.]

30.—Cucumber plants begin to appear.

Feb. 3.—Sowed a small Quantity of curious Polyanth-seed, given me by Mr. Hale of Hambleton,[1] in a box; & set ye box where it may receive the morning-sun.

Sowed 20 more Cucumber-seeds in the frame. First plants thrive, & look of a good Colour. Unusual sunny, fine weather.

Feb. 3.—Cucumbers in ye pot by the fire-side come up very well.

5.—Set in a nursery-bed a good parcel of Hyacinth, & Tulip-ofsets.

7.—Finished trimming, & tacking the vines according to Hit. Took away abundance of ye old wood: The vines in one Year more will be quite furnished with new.

Ashed the great mead, Clover-field, & part of the slip with three dung-pots of ashes: quite cleared the House.

Cucumber-plants thrive so fast, that to day the 12 day from sowing the seeds, many of the plants have got a rough leaf. Fine dry weather, with a good deal of Sunshine; more like April, than old January. Paths quite firm.

8: 9: 10.—Set-on three Labourers this fine weather to dig all my Ground ready for Crops: turn'd my plot of melon-earth the third time: & wheeled out of the way all the old rotten dung, & tan.

10.—Sowed Gallon of early pease; & halfpound of spinage: planted Gallon of Winsor beans, & 200 of Cabbage plants.

Feb. 9.—Turned-out of their pots, & planted in deep mould several of the best Cucumber plants: plants strong, & thriving.

Notwithstanding the long dry weather the Ground will but just work decently.

12.—Carryed into the Hot-bed Ground eight loads (dung-carts) of hot dung for the forward Cucumbers.

Perfect summer: the air full of Gnats: & the surface of the Ground full of spiders webs, as in a fine day in August. The sun lay so hot on the frame that the

[1] Hambledon, near Droxford.—[H. M.]

Cucumber-plants wanted to be shaded. Some plants have a broad rough leaf.

13.—Made the bank against the new-garden pretty fine & smooth by the advantage of this fine weather. Planted it with flowers in two rows: the upper row was Columbines. French-honeysuckles, & rose Campions, at a Yard apart: the lower row all sweet-Williams, at a foot apart. Ordered the bank to be well beat, & the water-table to be cut so deep, that no mould can tumble on the brick walk. The bank lays very handsome, on a hanging level.

Feb. 15.—Cucumber-plants thrive strangely. Some have got a fourth leaf quite expanded; & their first rough leaf as broad as a Crown-piece. No rain at all since this day month. Great fogs for these two days past, that hang 'till the afternoon: then bright sun-shine. Planted Holy-oaks in the new border under the rod-hedge down Baker's hill; & mended-out the borders in our own, & the Butcher's Yard.

17.—Received from M^r. Philip Miller of Chelsea about 80 Mellon-seeds 1754: immediately from Armenia; which he finds to be better than those that have been first brought to Cantaleupe, & thence to England.[1]

20.—Made my early Cucumber bed with 8 loads of dung; & cased it round well with a Coat of refuse hay, well sparred-on.

Feb. 20.—Black, rough, March-like weather: seems to threaten snow.

22.—Laid-on the hills of earth on the Cucumber-bed. Now rain after many weeks dry weather.

23.—Turned-out two pots of Cucumbers in one of the two-light frames: the Plants have got a fifth leaf, & a joint: the two first rough leaves are as broad as the palm of my Hand. This day month the seeds were put into the frame. Plunged 14 pots for Cantaleupes in the two two-light frames.

24.—Sowed six of the pots with Cantaleupe-seed from

[1] See Bell's ed., vol. ii. p. 347, where a letter from Miller to Gilbert White is reproduced.

Waverley 1756: & eight of the pots with Armenian-Cantaleupe 1754 from Mr. Miller. Fierce, piercing East-wind with a low, sinking Glass. The Glass has been up at, & above fair ever since new Year's day till Yesterday.

25.—Vast rain all night.

26.—Transplanted more Cucumbers in the other two light-frame. Bed full hot.

Feb. 27.—One pot of Miller's Cantaleupes begins to appear. Continual heavy rain.

28.—Sowed one more Armenian seed in each of the six pots: so there are three seeds in every pot. Plants came almost all up in general last night: raised the pots allmost out of the mould.

March 1.—Sowed some Cucumber-seeds to give away.

3.—The Cantaleupes looking not quite right. I plunged the pots up to their brims in the mould.

4.—Cucumbers grow away, & put-out long wires; have six leaves, & three joints.

Sad heavy showers.

Put-in a few more Cantaleupe-seeds into the worst-looking pots.

6.—Ventured to mat-down the Cucumber-frames untriged[1] for the first time.

Continual rain.

7.—Bright sun-shine all day; scalded some of the Cucumber-leaves.

8.—Continual rain all day.

9.—Raised the frames the thickness of one brick. Cantaleupes look in general very well: plenty of plants at present. Vast storm in the Evening, & very heavy rain.

March 10.—Vast tempest all night, & this morning; which at noon blew-down the weathercock on the tower.

12.—This day 6 weeks the Cucumber-plants appeared above ground; & have now five & six joints apiece, & are full of budds for bloom, & fruit. Watered them gently for the first time over the leaves with ye watering-pot. Promises for dry, & cold.

[1] Unraised.—[H. M.]

13 : 14.—Carted 20 loads of hot dung into the melon-ground for ye Cantaleupes : seven of my own, & thirteen borrowed.

15.—One of the Cucumber-plants has a Male-bloom fully expanded.

The weather very wet, & stormy.

Sowed ye Celeri Hand-glass.

17.—Vast storms still.

Cucumbers thrive, but not the Cantaleupes.

19.—Received from Brother Tho : three sorts of the double-flowering Sweet Briar ; & two roots of the large tap-rooted Lathyrus ; & three roots of the Lathyrus-Earth-nut with a tuberose root.

March 19.—Vast rain most part of the day. Wind abated. The late storms have done considerable damage among our ships.

20.—Cucumber-plants showed plenty of fruit for the first time ; all on the second wood. Black weather, & continual showers.

22.—Moved the seedling Cucumber-frame nearer to the two-light frames, & sowed it with radishes on very deep mould.

Beautiful day.

21.—Mowed the grass-plot for the first time : a vast plenty of Grass, which lined the Cucumber-bed. Made two beds, with one barrow of dung each, for two hand-glasses, for white-mustard, & cress.

23.—Planted 4 of the double-Briars in the new-Garden against the street, & one in the front of the House ; & the two long Lathyrus-roots against the apple-tree next Parsons's. Grubb'd the orchard-walk, & planted it with Holy-oaks, & Wall-flowers. Potted some sweet-williams.

Removed the double jonquils, out of the orchard, under Lassam's hedge.

24.—Dressed the Rasps. Removed half the Capuchin, & Brown-Dutch Lettuces from Dame Tyrrel's Garden back to the New-Garden.

Sowed four Drills of Marrow-fat pease in Baker's Hill.

Sowed a drill of parsley. Yesterday a beautiful Summer's day.

Grafted my three Cantaleupe-frames, & raised them 9 inches behind, and in proportion before. Hyacinths in bloom in the open air; & one Narcissus. Early Tulips have been blown above this fortnight.

25.—First Cucumber-blossom fully expanded.

Still, grey weather, with a very high Barometer.

Some fruit shows on the first runners of some plants. The lining of grass-mowings gives a great Heat to the Cucumber bed. Hyacinths abroad full as early, as those in y^e^ Glasses.

26.—Work'd-up the 20 loads of dung (brought in on the 14^th^) into a Cantaleupe-bed for the nine large lights. The bed is tucked to six feet & half broad, & 36 in length. Laid some very stiff loam all over about an inch thick; & put on the boxes, & lights. The bed is about two feet thick. Housed seven more barrows of dorton-loam; in all 14.

27.—Sawed-down those two espalier-trees in y^e^ New-Garden that bore angular apples; & employed John Lassam to graft the stems with some Cuttings from the Royal-russet in the Orchard. Grafted two of the Golden pippins in the Orchard with Cuttings from a tree of the same sort.

March 28.—Put the male-bloom to three of the first fruit-Cucumber-blossoms, that were just turning-in, in order to set them.

Sowed three pots more of Miller's, & three pots of Waverley-Cantaleupes, two seeds in a pot; to supply the hills in Case of any failure. Miller's marked as usual with sticks. Plunged the pots in one of the Cantaleupe-boxes.

29.—Sowed half a Gallon more, four rows of Marrow-fats, in the lower field-garden: the rows are four feet apart; the former sowing five.

30.—Put a brimful barrow of Dorton-loam into each light of the Cantaleupe-bed. The Hills will require, now

the boxes are raised, a barrow & half each at least. Bed comes slowly to its heat; & is very mild yet.

31.—Planted groups of Sweet Williams in the border under the rod-hedge down the shrubbery.

Put half barrow more of loam to each Cantaleupe-Hill. Bed very mild.

Finished a bastion, & Haha, fenced with sharp'ned piles, in the vista from Baker's Hill to the Great-mead: & a conical mount, about six-feet diameter at top, and five high, at the bottom of the great mead. Mount about eight days work; Haha about sixteen.[1]

Fierce frost, & vast hoar-frost on the Grass: the Ground continued very hard, and icy all day in the shade.

April 2.—Sowed ounce of Carrots with green, & white Coss-Lettuce; ounce of Onions; & a few parsneps. Fine weather.

3.—The Cantaleupe-bed not coming to a proper degree of Heat, I ordered it to be pulled to pieces, & worked-up with 10 loads of fresh hot dung just brought in. The Labourers made-use of about 16 loads of the first bed again: so the new bed contains 26 loads. Laid some loam all over to keep-down the steam; & some turfs under the Hills. Put one barrow of loam to each Hill.

Bed more than seven feet wide; & two feet & half thick behind.

April 4.—Widened-out the Cucumber-bed in front three feet with about two loads of the dung, which came-out of the Cantaleupe-bed; & laid-on a thick covering of strong loam: lined it behind with Grass, & weeds.

Some fruit set, that grows apace.

Planted some Everlasting-pease of my sowing last Year; and some earth-Nut Lathyruss under the rod-hedge against Parsons's.

Planted more sweet-Williams, & some Columbines under the rod-hedge against the shrubbery. Planted 8 Laurels, with a sweetwilliam between each two, on the

[1] The Haha still exists, and is in excellent preservation.—[R. B. S.]

bank of the Bastion behind the seat. Planted Columbines in the Orchard-walk.

5.—Raked-down, & weeded the Asparagus-beds the first time.

7.—On my return from Chilgrove & Harting I found the Cantaleupe-bed come to a very fine degree of Heat. Turned-out the Cantaleupes into their Hills: the plants are healthy, & well-rooted; but a little drawn by the large rambling runners of ye Cucumbers. The three nearest hills are Waverley; the six farthest are Armenian Cantaleupes. Six pots left, which I plunged in the great boxes.

Sowed about 40 seeds of the great White-Dutch-Cucumber, saved last Year.

Six pots of Waverley, & Armenian-Cantaleupes just coming out of the mould, by way of supply, if wanted.

8.—Vast rain from the East: & all day on ye 6th.

9. Cut first Cucumber: it had a good flavour, & smell. Several more set. The seeds were put into the Ground 10 weeks, & two days ago.

Unusual heavy rain for 29 hours.

11.—Vast rain great part of the day, & night.

The lining the Cantaleupe-bed between the frames with weeds cut from the orchard filled the bed with snails. Forced to take the weeds away, else the snails would have devoured all the plants. The water stands in the lining of the Cucumber-bed almost shoe deep.

At a mark cut in the bark of the great Oak in the mead, between two & three feet from the ground, I measured that tree, with a design to see how much the body may swell in one summer. It girted seven feet 5 inc.

April 12.—Sowed about a peck of old bacon-salt in middle of the great mead.

Made half Hogsh: of raisin wine with an Hund: of Smyrnas, & half Do. of Malagas: put to them in the tun-tub 27 Gallons of water.

13.—Made an Annual-bed for the biggest one-light frame with 6 barrows of hot dung, & one of weeds: laid on the mould six inches deep. Finished-off, & raked very smooth

The Vicarage from Garden

the bastion, & sowed it very thick with rye-grass, & white clover. Sowed ye bare places in the fields, & orchard with the same.

Planted two rows of slips of a very *fine sort* of double-bloody-wall-flower from my Dame Scot's of Harting.

Made the ground very mellow with lime-rubbish. Sowed a plot of Holy-oak-seed, & leek-seed. Planted some rose-campions, & Columbines in the new Garden.

A perfect summer's day, that fetched ye beds finely to their heat after such gluts of rain.

Saw seven swallows, the first this Year, playing about James Knight's House.

My great Dutch-Cucumbers come-up in one of the Cantaleupe-boxes almost every seed.

14.—Sowed the annual Bed with African, & French Marrygolds purple, & white Asters, & pendulous Amaranths.

Planted a potatoe-bed with fine large potatoes cut in pieces, which came from Swarraton: three rows a yard from each other. Put half barrow of loam into each Cantaleupe-light.

19.—Cut brace of Cucumbers: the second time of cutting.

Sowed everlasting pease, & wild-Lathyrus from the Lythe; soaked the seeds in water two nights & a day: Dwarfsunflowers; Nasturtiums; Tree-primroses; Rhubarb; Boorcole, red, & green; & savoys.

Dressed Artichokes.

April 16.—Earthed Cantaleupe hills for the first time: examined into the hills, & found the bed unexpectedly warm: no loam burnt, but very hot. Gave a pretty deal of water. Plants in general thrive, & throw-out runners. The turfs at bottom very useful. Very cutting, March-like weather.

17.—Cut brace more of Cucumbers.

Very stormy, cold weather.

16.—Heard the first nightingale in my fields.

On my return on the 28 from Oxõn I found the Canta-

leupe-plants in good Condition; several of the runners had three or four Joints apiece. The three hills of Waverley-plants much more gross, & strong than any of the Armenian: tho' the last are in a promising way. Stop'd-down the runners, & cut away some plants, where very thick. The bed very hot. One hill quite destroyed by a Grub: John destroyed the Grub, & transplanted-out a fresh pot in the Hill.

Cut this day the twentieth Cucumber: many more growing in succession.

Cutting east wind for some days.

April 30.—Made five hills in the new Garden for Hand-glasses, three with two barrows of hot dung apiece, & two with two apiece, for the large white-Dutch-Cucumbers.

Some of the Cantaleupes have a shew for bloom: their hills have been earthed twice.

Sowed more balsoms in pots: the first sowing sadly drawn.

Stuck the dwarf-early-pease with sticks out of y^e^ faggots.

May 1^st.^—Pulled-away the Hedge round the fir-quincunx, & hoed the Ground clean.

2.—The Hanger out in full leaf; but much banged about by the continual strong East-wind that has blown for many days. The buds, & blossoms of all trees much injured by the wind. The ground parch'd, and bound very hard. The cold air keeps the nightingales very silent. No vegetation seems to stir at present.

Disbudded some of the vines: the buds are about an Inch long.

3^rd.^—Made second annual bed with 6 barrows of Grass, & weeds only; no dung.

Planted-out the five hand-glasses with the great white-Dutch-Cucumbers; 4 plants in a hill. The plants are pretty much drawn. This evening the vehement east-wind seems to be abated; & the air is soft & cloudy.

Ground bound like a stone.

May 4.—Sowed a pint, four rows, of small dwarf white-kidney-beans in the lower field-garden.

Earthed the Cantaleupes the third time : found all the plants in a very flourishing way, & the fibres extended to the very outsides of the hills. Cut-away the plants to one in some of the hills; & left two in some, stopping down the worst plant very short towards the bottom of the runners, for experiment sake, to see what the small wood about the stems will do. Some of the plants offer for male bloom.

Saw the first Redstart, & Cherrysucker.

Sowed about two doz: of the large white-Dutch-Cucumber-seeds for y^e^ latter handglasses : the first sowing got full tall, & big.

Delicate soft rain all the afternoon, & all night, which soaked the Ground well to the roots of all vegetables.

5.—Fine Growing weather.

Several of the Cantaleupes have male blossoms fully expanded.

May 7.—Disbudded all the vines according to Hit. Almost every shoot shows bloom.

Housed 21 barrows of the last prepared Cantaleupe loam : by means of the late rains in (*sic*), is in most delicate order, & crumbles quite to dust.

9.—Berriman sowed Baker's Hill with Barley, & after it 8 pounds of Clover, & two bushels of white-seed, or Rye Grass.

The Ground cold, & cloddy, & pretty full of daisey-roots, & grass, & not in very fine order. Added since 8 p^ds.^ more of Clover.

10.—Several Cantaleupe-plants shew fruit, & grow away at a great rate.

Pricked-out the annuals into the second hot-bed.

Fine showery, growing weather.

12.—Gave the Cantaleupe-hills a full barrow of loam each : the fourth time of earthing. Cut away the plants to one on a hill.

14.—One Cantaleupe-fruit in full bloom.

Made three hills for large white Cucumbers in Turner's Garden.

May 15.—Sowed the second pint of french-beans, large white Dutch: soaked them in water over night.

18.—Sowed a Crop of white, green, & black Coss-lettuce.

All my Savoy-seed, & Boor-cole fails this Year: not one plant appears.

20.—Strong sun-shine for many days, & a sharp east-wind. Cold white dews in the mornings. Our clay ground as hard as a stone. This burning Sun, as usual, makes the Cantaleupes not look quite right: most of the fruit, as soon as it appears, turns yellow. The single fruit, that is out of bloom, not likely to stand.

The Dwarf french-beans are come-up pretty well.

The lettuce that stood the winter are finely leav'd. This unkind weather stops the setting of y^e^ Cucumbers.

21.—Earthed the Cantaleupes the last time within their boxes. Finding the Cantaleupes much exhausted, & dryed by the fierce heat of the Sun, & the dry air, I watered them all over, leaves & all, with one small pot of water.

The leaves all hang-down, & have a dry, paper-like feel, & look woolly; & the fruit all turns yellow. I remember they had all just the same appearance at this time last Year, the sun-shine & east-wind being as vehement.

Planted 100 of late Cabbages.

26.—The burning, sunny weather continues.

The Gardens suffer much by the drought.

29.—Frequent showers.

The watering the Cantaleupes twice over y^e^ leaves seemed to refresh them very much; but has occasioned one of M^r.^ Hunter's plants to grow a little mouldy at a Joint on one of the leaders near the stem. So that water, tho' never so much wanted, is dangerous near the stem.

The Armenian plants in general have small leaves, & vines: & one in particular is so fine, & wire drawn, that one would imagine it would never be able to carry any fruit to perfection. The rest are healthy, & are disposed very regularly in their frames; & are full of fruit. No fruit set yet.

Took off the glasses from y^e^ early Cucumbers, & annuals to give them y^e^ benefit of the showers.

28 : 29.—Housed four loads of peat in most excellent dry order. The uncommon dryness occasions some waste by making the bats[1] crumble.

Gathered two scarlet strawberries.

The early beans have large pods : the early pease are well blown.

30.—The rain on the 29^th^ very heavy for some Hours ; so as to make the Cart-way run. Raked all the rough-dug ground that was, 'till moistened, like an heap of stones. Prick'd a plot of Celeri.

31.—Sowed a pint more of large French-beans. The first sowings strangely devoured by snails. Tull gathered a bowl-dish three quarters full in one evening ; & still the plants were almost covered with them y^e^ next. Cold winds, & frosty mights since the rain.

Hoed the strawberries that were planted last Autumn, & filled-up the vast cracks in their beds. At least half the Autumn planted pine-strawberries are dead. The scarlet will have some fruit ; & so will the few plants of Collinson's. The Nova Scotia will not bear this Year.

Stringed the bearing pine-strawberries, which are full of bloom.

The Autumn sown Capuchin, & Brown-Lettuce, now in high perfection. I have a very poor Crop of Coss-lettuce this Spring.

June 1.—Distant thunder, & fine showers all the evening, & part of the night.

May 31^st.^ *June* 1^st.^ : 2^nd.^—John[2] tacked all the vines for the first time this Year according to Hitt. Those vines that were dressed in that method last Year, are now full of fruit : those that have been trained only this Year have little, or none.

[1] The peat was cut into pieces of about the size of a brick-bat. Even fifty years ago many people used peat-"bats" for banking up their wood-fires, but coal has now taken its place.—[H. M.]

[2] His nephew.—[R. B. S.]

Frequent good showers. The ground is now finely soaked.

Continued picking vast quantities of slugs from the french-beans, which are in a poor way.

June 3.—Continual heavy showers all night, & all day. The Ground is now well soaked.

5.—Lined-out the Cantaleupe-bed with twelve dung-carts of hot dung. The bed is now 12 feet broad, & 40 feet long.

Continual showers all day: so that no loam could be laid on ye bed, but what was already housed in the earth-house.

The Fig-tree has plenty of fruit, which grows apace.

June 5.—Such a violent Rain, & wind all the evening, & most part of the night that they broke-down, & displaced the pease, & beans, & most of the flowers; & tore the hedges, & trees, & beat down several of the shrubs.

6.—Continual rain all day. The lining of the Cantaleupe-bed, which is not yet earthed, in danger of losing it's Heat by being so thoro'ly soaked.

8.—Earthed the lining of the Cantaleupe-bed, & raised the frames to the top of the earth.

The Waverley plants had filled the frames with their roots: the fibres of ye Armenian sort had not extended themselves so much.

Sowed a pint more of dwarf-kidney-beans in the room of those that were devoured by snails. Fine summer weather.

Turned-down the three forward basons of Cucumbers from out their Hand glasses.

9.—Gathered first beans, a large Mess.

Fine soft weather for some days; now a soaking rain.

11.—Finished-off the borders in the new-Garden, by cleansing, raising, & laying a good coat of fine peat-dust, finely sifted, in order to make them light, & dry.

Sowed the first plot of Endive; & a plot of Lettuce, green & white Coss.

12.—In the Evening began a vast storm which continued

all the night, & tore & destroyed the things in the Gardens worse than the former : it broke down vast boughs in the Hedges, & had like to have overturned the Limes in the Butcher's Yard. If the Annuals had been planted-out they must have been quite whipped to pieces. The hedges look bare, & unsightly by being lashed, & banged by the wind ; & the Ground is strawed with leaves.

13.—The middle Waverley-Cantaleupe has some decayed, rotten runners : Quæ : if occasioned by those two waterings all over their leaves in that scorching weather in May.

The leaves of the Armenian-Cantaleupes have a much blacker aspect than those of the Waverley.

14.—Planted the empty basons in the field, & two borders in the New-Garden with annuals, French, & Afr : Marrygolds, Sunflowers, Nasturtiums, pendulous Amaranths, & China Asters.

Hot growing weather : vast showers about.

15.—Planted 150 Savoys from Alton.

16 : 18.—Lined-out the Cantaleupe-bed with loam very deep quite down to y^e^ Ground on each side : the fibres may now, if they please, extend themselves 16 feet.

The plants look in a most thriving way, & are loaded with fruit ; but they hold-off from setting strangely : no one set yet.

Cut-off a great branch of one of the Waverley-Cantaleupes, that was quite rotten.

June 19.—Planted-out Crop of leeks ; & some late Coss-Lettuce.

Furious hot summer weather.

20.—To be planted pint of french-beans ; and an early row of Celeri to be trenched.

All the former Crops of french-beans like to come to nothing.

23.—Called-in upon M^r^ Miller at Chelsea, & found he had 18 lights of Armenian-Melons in excellent order. There were about two brace, & half of fruit to a light, full-grown, & very rough, & black. He pushes his lights,

it seems, quite down in dry weather: & says the defect of male bloom is owing to ye seeds being of some age.

30.—On my Return from Sunbury I found my Cantaleupes in very bad plight indeed: two of the Waverley plants were quite rotten, & corrupted at the stem; & one of the Armenians, the day after I came home, withered away, tho' perfectly sound; & dyed as if eaten-off at the root; tho' upon search no grub could be found in the mould. And what is stranger, no one fruit was set upon any plant; tho' hundreds have dropp'd away. There certainly is a want of male bloom in the Armenians to a degree: but then the Waverley plants over abounded; & yet cast all their fruit.

I found a vast crop of pease, thro' the dripping season; & green pease soup every day. The first hand-glass cucumbers are in full bearing: I intend to save 4 more (the large white Dutch) for Seed. The small forward beans have an unusual Crop. The fourth & fifth crop of french-beans like to come to good.

July 2.—Planted-out a vast bed of Holy-oaks.

6.—Not one Cantaleupe set yet.

July 6.—Planted-out about 50 Polyanths, raised this spring from Seed given me by Mr. Hale.

7.—Finished my Hay-rick in most excellent order.

The weather has been so perfectly hot, & bright for these five days past that my Hay was all cut, & made in that time.

The Crop was so great that Kelsey's people made 8 carryings of it: & the burden in the great mead was supposed to be considerably greater than ever was known. To my own stock I added two tons from Farmer Lassam, which in all make a considerable rick.

Finished cutting the hedges round Baker's Hill.

July 21.—On my return from Dene on this day, I found I had but one Cantaleupe set, and that a fig-shaped one, not likely to come to good.

The plants are in uncommon vigour, & grow unaccountably, & are full of fruit still; but strangely deficient

in male-bloom. The void spaces in the frames are quite filled-out with the remaining plants.

Mr. Cane's Cantaleupes were all burnt-up, with a noble Crop on them about ten days before the fruit would have been ripe. He had a fine Crop: but the intense heats scorch'd off all the fibres thro' his light, dusty earth.

Tull planted-out Endives, & lettuce in my absence; & pronged-up the bulbous roots against Parsons's, planting annuals in their room. John trimmed & nailed the vines in a very handsome manner according to Hit. Those vines that have been managed in that manner for two years, have a noble crop of fruit very forward. My Crops of beans, & pease are very extraordinary this year. The annuals against the broad walk in the new-Garden are uncommonly large.

July 23.—Gathered 36 Cucumbers. Earth'd-up the Chinks round the hand-glasses with melon-loam.

Unusual hot summer-weather for three weeks past. Wheat-harvest is begun in some places.

26.—Pulled-up an other of the Armenian Cantaleupes, which was rotten at Stem. So now I have lost four plants out of nine. The fruit begins to set now at a vast rate on the remaining plants; as fast as ever they fell-off before.

The hot vehement season continues: the ground is wonderfully burnt.

July 31.—Now a great rain after several weeks drought.

Aug. 1.—On Examination I found above 20 brace of Cantaleupes set: about 10 brace on one of the Armenian plants; about 8 brace on the only remaining Waverly plant; about 3 brace on an other Armenian; 2 brace (one a full-grown fruit) on an other: & one Armenian is quite barren. The Waverley plant is infected with the rot that destroyed the rest, which I endeavour to stop by wiping, & dust. It is observable that those plants that bear so prodigiously are those which (their fellows being rotten) have the space of two or three lights to run in. Had the fruit set in this manner a month or six weeks ago (when it all dropp'd off) there had been a noble early Crop.

Aug. 10.—The first-set Cantaleupe, tho' unpromising at first, now a fine, beautiful, large fruit just like Miller's. The rest of later date come-on apace. Prodigious hot, sunny weather.

Sowed half pound of spinage mixed with Capuchin, & Dutch-Lettuce, & white-turnep-Radishes. Trenched four rows more of Celeri: & planted-out 150 more Savoys.

Tyed about 20 of the Endives.

Sowed a little more Endive-seed.

14.—Lost the third, & last Waverley-Cantaleupe with a Crop of 4 brace of fruit on it. I have now lost five plants out of nine. The four Armenians now remaining have 10 brace of fruit likely to come to good. Pulled-off two brace & half of fruit, some of a considerable size. Hot dry weather still.

Aug. 16.—Sowed a Crop of Coss-Lettuce, and Endive to stand the winter.

Trimm'd the side-shoots of the vines for the last time. The Clusters are unusually large, & forward.

Perfect Summer-weather, but cooler.

27.—Cut a vast quantity of White-Dutch-Cucumbers. One that was young, & eatable weighed 2 pounds 5 ounces, & measured 12 inch: & half in length. The Canker continues to spread among the Cantaleupes, & is likely to destroy plants full of beautiful fruit within a fortnight of being in perfection.

28.—Planted on the bank several large white Lilly-roots, Crown-Imperials, & double white-rockets.

Cut the first Endive.

Septem^{r}. 4.—Planted some tree prime-roses on the bank.

It has been very wet, blowing weather for several days past.

8.—Tyed-up about 2 doz: of the best bunches of Grapes in Crape-bags.

11.—Cut y^{e} first Cantaleupe: it was finely emboss'd, & weigh'd 3 p^{ds}. 11 ounc: but when it came to be cut-up, it had hardly any flesh, & was rank, & filthy.

Tyed-up more Endive.

Uncommon sunny, sultry day.

15.—Tyed-on 18 more Crape-bags on the best bunches of Grapes.[1]

Fine dry weather with pretty cold dews.

29.—All the Cantaleupes cut. Not one in perfection, tho' many were finely embossed, & looked wonderfully promising. The Canker, I suppose, had prevented their drawing any nourishment, & getting any thickness of flesh.

Fine dry weather for a long time past, & the roads perfectly good.

The small bunches of Grapes are very good; the large ones not yet ripe against the wall.

Octob. 1.—Tyed-up last Crop of Endive.

The largest Cantaleupe was finely embossed, & tho' almost all rind, weigh'd 4 pounds 2 ounces.

3.—Now a vast rain after many weeks fine Autumn weather.

5.—Gathered the two first bunches of bag'd Grapes: they were a little mouldy; but the sound parts of the bunches were perfectly ripe, & sweet.

Octob 8.—Now perfect summer weather again, after one wet day.

The Grapes in the bags unusually fine; & both bunches, & single Grapes are as large again as usual. It is to be observed that as this new Culture swells the Berries so much; they are apt in this Cluster-sort to press too hard on each other, & prevent ripening, & occasion mouldiness: therefore if the grapes were thinn'd out the beginning of the summer with the points of a pair of scissars, it would certainly prove an advantage.

10.—Planted two rows of Crocuss along the borders under the dining-room windows: both borders, especially that that hath the vines in it, were made very light, & mellow with an abundance of Sand, & blacksmith's cinders.

Weeded, & cut down the leaves of the strawberries; & mended-out those beds that failed with the pine sort.

[1] To protect them from the wasps.—[H. M.]

Now very dry, & warm: but there are great tokens of rain.

11.—Now great rains, & wind.

Tunn'd three quarters of an Hogsh: of raisin-wine. The Quantity of raisins in the mash-vat were 1 hund: & half of Symrnas, & 3 Quarters of an hundred of Malagas.

The Quantity of water put-up was 18 3-gallon-buckets; which made sufficient Quantity without any squeesing. The Colouring was 14 Quarts of Elder-syrop. The weather was so hot that it stood but eleven days to ferment in the vat. The elder-Juice was boiled-up with 14 pounds of sugar.

*Octob*r. 16.—Finished-off the bank in the new-Garden, & planted the front row of the additional part with pinks both red, & pheasant-eyed: laid it with turf some days agon.

On measuring the great oak in the meadow which was measured in ye spring, I found it to be encreased in girth about one inch.

18.—The mornings begin to be frosty, yet ye Grapes continue in high perfection.

19.—Finished a broad brick-walk thro' ye new wicket at the end of the dining-room; & carryed a narrow one up by the side of ye pitching to the orchard-walk: rectifyed the broken pitching, & turned the gutter at the brewhouse door, so as to get a 12 inch border four feet long for a white-muscadine-vine.

22.—Planted a row of Coss-lettuce *touching the wall* along the vine-border under the dining-room window to stand the winter. Planted a row of Holy oaks against the boards of the wood-house.

24.—Planted the irregular slip without the new wicket in the Garden with first two rows of Crocuss; a row of pinks; several sorts of roses; Persian Jasmine, & yellow Do. several sorts of Asters; French-Willows; a curious sort of bloody wallflowers; Double Campanulas white, & blue; double daisies; & a row against the hedge of good rooted Laurustines. Planted the back row of the part of the bank newly lengthened-out with blue, & white Double Cam-

"The small bunches of grapes are very good"

panulas; & the border under the dining-room window with the bloody-Double-wallflowers. Planted a bason in the field with french-willows. Planted many dosens more of Coss-lettuce against the buttery-wall, & down ye wall against the Yard.

Octobr. 25.—Planted a large layer of the musk-rose from Mr. Budd against the board of the old barn.

Wet season after very dry weather.

26.—Trimm'd, & tack'd the bottoms of the vines according to Hit: the lower parts of those under the Dining-room window are deficient in wood, 'till more can be got from ye stems.

Began curving two shoots in order to reduce two of the vines to regular shapes from the bottom by degrees.

Novemr. 5.—Planted my Hyacinths, Narcissus's, Ranunculuss, Tulips, Crown-Imperials, & Anemonies in the border against Parsons's. It had been trenched very deep with a good Quantity of rotten tan, & was in perfect dry order when the roots were put-in.

Planted a small thriving larch at the east corner of Baker's Hill; two well-grown Provence-roses in the field-shubbery; and two Monthly roses in the orchard walk; all from North-Warnboro'.

Fine sunny weather. Planted two rows of hardy lettuce under the filbert-hedge against Parsons's.

6.—Trimmed & tack'd the fig-tree, leaving a leading bough in the middle to fill the wall by degrees quite up to the eaves.

This tree is full of young wood, & fills the wall well; & may be carry'd by a second stage according to Hit up to the tiles.

Planted a number of Goose-berries & Currants from Mr. Johnson, good plants, in the orchard-walk, & among the rasps.

The Grapes lasted in good perfection 'till the beginning of Novemr., those that were hung-up in the study are very sweet, but shrivelled up like raisins, notwithstanding a grape was stuck on the stem of each Cluster.

12.—Plunged the seven pots of Pyram: Camp: in the border against Parsons's under y^e^ Filbert-hedge. Planted a nursery-border of small bulbous-roots. Dug up a decaying Cluster-pine, & parsley-elder in the shrubbery, & put a two-thorned-Acacia, & Judas-tree in their room. A most delicate summer-like day.

Nov^r^. 14.—Transplanted the striped-Epilobium into a fresh bason. Planted about 20 fraxinellas, seedlings from M^r^. Budd, in a nursery. Planted several Laurels in the gaps of the Hedges round Baker's Hill.

The potatoes raised from about 14 large ones cut in pieces, turned-out a fine Crop of about 3 Bushels: several single ones weigh'd about a pound. Put-by about 30 of the finest as a supply for a crop next year.

Planted some cuttings of parsley-elder, with some cuttings of fine white Currans.

15.—Planted in the new-garden two standard-Duke-Cherries; an espalier-Orleans-plumb; an espalier-green-gage plumb; a duke-cherry against the north-west-wall of the brewhouse, & a standard-muscle-plumb in the orchard. There trees came from Forster of North Warnboro', & seemed to be good in their kind; were planted the day they were taken out of the nursery, in basons, which being prepared before, were in excellent crumbling order.

Nov^r^. 16—Planted 3 pints, 7 rows of small early beans in the lower field-garden.

Feb. 12.—From Farmer Kelsey 3 loads of Dung, p^d^ of my own one: 1 p^d^.

March 13.—From Farmer Parsons p^d^. 5 loads.

From F: Berriman 4 loads, p^d^.

14.—Farmer Berriman 5 loads, p^d^. of my own p^d^. seven.

„ Farmer Kelsey 3 loads, p^d^.

April 2.—Farmer Kelsey 3 loads, p^d^.

„ „ Parsons 3 loads, p^d^. of my own two p^d^.

„ „ Berriman 2 loads, p^d^.

June 1.—Farmer Kelsey 4 loads, p^d^. of my own three p^d^.

„ 5.— „ Berriman 5 loads, p^d^.

Garden-Kalendar for the Year 1760

May 17.—On my return this day (after six months absence at Lyndon, & London) I found my Garden in general in very good order, considering the long drouth this spring. The Cucumbers in full bearing, but stunted in their vines. The Cantaleupe-melons in good condition, & just shewing fruit; & the Succados very stocky plants.

The Asparagus beds are got stronger & bore wonderfully this spring. All the kitchen-crops are in good plight: & the Coss, & hardy lettuce that stood the winter, very fine. The Bergamot-pear, & knobbed-russet grafts like to take.

May 18.—Fierce storms of Hail, which batter'd the vine shoots at the end of the Dining-room very much. They were very forward this sunny spring: the leaves were cut full of Holes, & several shoots were beaten quite off the trees. The persicaria-plants in the border under suffered much.

28.—Dame Turner, & Girls weeded all the brick walks. Prick'd-out first Celeri, & prick'd-out, and planted a good many Savoys.

June 4.—Furious hot weather for several days. The pease, & beans kept back for want of moisture. Some Cantaleupes in bloom.

Covered all the inside of the boxes with wheat-straw to keep the sun from drying the mould; & to prevent much watering.

Tull employed in cleansing the garden from weeds. The vine-shoots grow in a most extraordinary manner, & are full of fruit.

Planted some Persicarias in the New-garden border.

Out of one vine-shoot, which was procur'd from the old stem of a vine last summer; & being exceeding strong was laid-in five feet long, arise as many shoots this spring as produce 14 bunches of Grapes. Fine rain all night.

6.—Planted-out all the persicarias; & about 2 doz: of the slips of the double bloody-wall-flowers.

Moist, hot, growing weather.

7.—Lined-out the melon-bed very strongly, more than three feet on each side, with eleven loads of dung, & a large Quantity of weeds. Planted out a bed of late Cauliflowers.

June 9.—Gather'd first strawberries, scarlet, & Nova Scotia. Cut the crop of rye-grass, & clover in Baker's hill: a good Crop.

10.—Planted 22 basons in the field with annuals, french & Afr: Marrigolds, China Asters, pendulous Amaranths, & sun-flowers.

11.—The vines at the end of the dining-room in bloom; about three weeks sooner than usual: occasioned, I suppose, by the very sunny season.

12.—Housed the Baker's-hill-hay in excellent order: there were three decent loads.

14.—John finished his second tacking & thinning the vines: those against the Yard shew prodigious strength; but are not yet blown. Dry, settled weather.

June 14.—Planted annuals in the home Garden.

15.—Wood-strawberries came-in in plenty.

16.—Set Tull to earth the Cantaleupe-bed all over to the Ground very thick.

The Cantaleupes are full of fruit in bloom, & now shew a tolerable share of male bloom.

The vines begin to blow against the Yard.

Stopp'd-down the shoots of the vine over the entry-door.

17.—Sowed first endive-seed.

Three vine-layers (last Year's-shoots) have produced between them 39 bunches of Grapes.

19.—It being dripping weather, planted & pricked-out plenty of Savoys, & Celeri; trench'd-out one row of Celeri; & tyed-up several spring-sown Coss-lettuce. Those that stood the winter are all gone to seed.

Cold frosty air.

The muscadine vine-cuttings in the gutter thrive well; & so do the cuttings of the same sort, & of the cluster-vine in the nursery.

The grafts of the Bergamot-pear, & knobbed-russet from Ringmer take well.

This cold, windy weather likely to injure the vine-bloom at the end of the Dining-room.

The Cantaleupe-bed earth'd all over down to the Ground in an unusual thick manner.

The Nova-Scotia-strawberry a good bearer, & ripe even before the scarlet.

June 20.—Planted-out leeks, & Boorcole; & sowed a plot of turneps. Continual showers.

21.—On looking over the Cantaleupes, found one fruit set, & more in a promising way.

Some few bunches on the dining-room end have some Grapes set on them. Showers.

23.—The Succado-melons (of which I have three basons in the space of two lights) have got several fruit in full bloom.

Vast rains from the East.

June 26.—Great rains.

27.—Sowed a small plot of Coss-lettuce.

28.—Agreed with John Wells to purchase the upper part of Lassam's orchard.

Stopp'd part of the vines against the yard, which are in bloom.

July 1.—Finish'd stopping the vines.

2.—Sowed second Crop of Endive, & more lettuce.

3.—Sultry dry weather for three days: vast rains, & thunder in the night.

Planted-out two rows of seedling-polyanths all along the orchard-border.

New-planted two basons of the cold cucumbers: all the cumbers are in a strange way, have no vines; & are likely to come to little. The complaint is general.

July 6.—Vast rains, & a flood.

7.—Clear'd-out the melon-frames that were quite choak'd with vines: not above 4 or five Cantaleupes set: the biggest fruit about the size of a hen's egg: the Succades shew no disposition for setting yet. Rain still.

Finish'd cutting the tall hedges.

Some grapes as big as young pease: all the bunches in bloom, & yield a smell that may be distinguish'd at many Yards distance.

14.—Cut both the meads; a decent Crop. The weather was so hot, & sunny that we carry'd most of the Hay the next day; & finish'd the rick in excellent order the third.

18.—Planted-out endive, a large plot, in the field-garden.

20.—The vehement sunny weather for these 8, or 9 days past has brought on the annuals strangely; & forwarded the white Cucumber-plants sown in the middle of May so much that they seem likely now to come to good.

July 21.—Trench'd-out a Crop of Celeri in Turner's Garden.

The first hand-glass white-Cucumbers all perish'd with the blight.

Melons make out lamely: one Cantaleupe full-grown; no Succade set.

Trimm'd the vines the third time. The grapes swell this hot weather.

The tree-primroses in full bloom, & are a shewey proper plant for large outlets.

August 1.—Returning from Dene I found the Melons in a poor way: but two Cantaleupes full-grown, & those

small; & only five or six more just set; & only one Succade set.

The late-sown white-Cucumbers begin to bear a little; the first are quite wither'd away.

An universal blight has this summer more or less affected all the vegetable world.

The grapes to the Yard are very thinly set: those to the South-west are thick set, & very forward; but the Bunches are small.

Tull[1] in my absence trench'd four rows of Celeri in Turner's Garden; & planted-out a Crop of Savoys. No rain for three weeks & three days 'till Aug: 1: & then showers.

Aug: 4.—Sowed a box of Mezereon-seed.

7.—Planted-out a Crop of Coss-lettuce to come-in in Septem^r.

Continual Showers; & the Corn begins to grow.[2]

9.—The Succade-melons now set apace.

The white cucumbers bear but poorly.

10.—Vast rains.

11.—Cantaleupe-melons set now; but are seemingly too late for ripening.

Sowed Coss, & Dutch lettuce to stand the winter.

Sowed a quarter of a pound of spinage mixed with white turnep-radishes. Put the bulbous roots in paper-bags, and hung them in the lumber-garret. They are vastly increased, especially the Hyacinths.

Aug: 14.—Trimm'd the side-shoots of the vines the fourth time: the fruit thin on the bunches.

Fine harvest weather for several days past, with cold drying north winds.

The white-cucumber-plants, which produced one fair large fruit; now shew nothing but spotted, sickly ones. The early bed bears pretty tolerably still.

18^th.—Cut more than half the second Crop of Clover on

[1] Tull's name was "Robin," and it occurs in the account-book (see Bell's ed., vol. ii. p. 321.—[R. B. S.]

[2] *i.e.* sprout in the sheaf.—[H. M.]

Baker's hill, which by reason of y^e^ dripping weather could not be housed till y^e^ 23^rd.^ There was one good load in pretty good order.

23.—Some of the Clusters of Grapes against the end of the dining-room begin to change colour.

27.—Cut Miller's first Armenian-Cantaleupe: by no means a curious fruit.

Brought three plants of curious Celeriac from Waltham: the leaves are jagged like curl'd parsley.

*Sept^r.^* 1.—Housed the remaining Clover in Baker's Hill; which, considering the showery season, was got in good order.

*Septem^r.^* 2.—Found several large Cantaleupes in a neglected frame.

Tyed up the first Endives, & some late Coss-lettuce; & earth'd-up the early row of Celeri quite to the top.

8. Gathered the first bunch of Grapes from the end of the dining-room, which was quite ripe: those on the Yard-side are but just turning colour. My Grapes in general are but thinly set.

Plenty of figs in good ripe order.

Curious summer weather for many days.

11.—Gather'd the first Mulberry that my tree ever produced: it was very sweet, & good, but small.

There are some more on the tree.

12.—Cut the first Succade-mellon; it was very weighty for its size, which is always small. It proved very fleshy & highflavoured, & seems a valuable sort.

Cloudless skies, strong sunshine, & strong East-winds for many days, which rise & fall with the Sun. Fruits ripen at a vast rate; & the roads are perfectly dry.

*Sept^r.^* 12.—Tull & John are busy every day in grubbing, paring & burning the new-purchased Garden; & harrowing-out the couch-grass.

The weeds & turf have produced already many bushels of ashes; & will soon be burnt-up if this dry weather lasts.

The Persicarias are vastly large, & fine.

All the annuals are come to a good size.

13.—Tyed-up 20 more Endives.

Gather'd two bunches of Grapes, which were perfectly sweet & ripe. Very sunny weather still.

26.—The Succado-melons now come apace.

Vast rains, thunder, & lightening for 8 or 10 days; & a likelihood of great floods.

Grapes in great plenty, & perfection.

29.—Cut a brace of Succado melons.

Gathered the Cadilliac pears, about half a bushel: three parts in four were blown down. Vast rains, and storms.

*Octob*r. 1.—Used the first Celeri.

2.—Cut the last Succados, & a good-looking Cantaleupe. Continual rains; & frequent thunder still. The labourers work at the Haha when the weather permits.

*Octob*r. 14.—Continual wet weather for a month: so that the fallows are full of water, & no corn can be sown.

15.—Transplanted six Geraniums into six penny-pots to stand the winter.

The new part of the Garden quite cleared from trees, & stools of trees.

Grapes in plenty, & perfection.

18.—Turned-out seven pots of Pyram: Campanulas into a mellow, sandy Border.

22.—Transplanted a White-Muscadine vine of Mr. Budd's sort into the border under ye Dining-room window. John annointed it with Dr. Hill's mummy, & planted it a Cutting last March; & now it was a strong plant, & had a quantity of long fibres.

In the summer it made a shoot of about four feet, & was now headed down to 4 or 5 buds.

No frosts yet.

24.—Put the whites of 8 eggs, shells & all, with a little sand, to 3 quartrs. of an hogshead of raisin-wine, which would not draw fine.

Put Quart of Brandy.

Grapes continue very good.

Octob^r. 25.—Received from M^rs. Snooke a basket of swans-egg, Doyenne, White Buree, & Colmar-pears for a specimen: also some Crasans, & Spanish Boncrêtiens.

27.—Took-up from the Laurustine-hedge about 40 layers: laid-down about as many more.

Nov: 8.—Began dressing the vines: found plenty of new wood in most places.

There have been a few smart frosts this autumn: but in general a continual run of wet weather for these six weeks past; & great floods.

10.—Widened the grass-plot towards the wall-nut-tree.

The farmers have been greatly hind'red in their wheat-season by the rains; & will hardly be able to sow all their fallows.[1]

12.—Removed 8 black-cluster, & 6 muscadine-vines (which were planted Cuttings last April) into the sandy bed at the end of the Asparagus. Most of them were well rooted, & had made good shoots. Set the Geranium-pots in y^e Garret-Window.

Nov^r. 15.—Continued to curve the leading shoots of the two vines against the end of the Dining-room, which in one Year more will be at their full length, & may be reduced to a single stem.

The vines against the yard abound in Young wood of a vast length, & will have fresh Horizontals everywhere, without bending back any shoots.

18.—Planted-in between the rows of Crocuss round the dining-room 100 Scotch-Crocuss, & 50 double snow drops.

19.—Planted the new bank with perennial sun-flowers, rose-campions, tree-primeroses, & several sorts of Asters.

Planted a bed of tulips, Hyacinths, Ranunculus, Anemonies, in a plot well-mellowed with lime-rubbish. A tolerable dry season for four or five days, after a glut of rain for many weeks.

[1] In those days the farmers used to "fallow" their ground, *i.e.* plough it up, and allow it to rest untilled throughout the summer previous to the wheat-sowing.—[H. M.]

Dug the walks at the top & bottom of the new garden in order to prepare y^m^ for leveling.

*Nov^r^* 22.—Dug-up the double white rockets under the back of the melon-screen, & planted them on the end of the bank next the dining-room: planted with them some double white Campanulas. Planted 20 double daffodils near the other bulbs. Laid a shoot of the Moss-provence-rose, binding it round very hard in two places with wire twisted very tight, in order to make it take root.

25.—New-planted a bason of red-martagons: planted some Crown-Imperials, red Martagons & Jonquils on the bank: planted the ofset-bulbs, & roots in a nursery bed.

Finished the vines.

*Decem^r^* 8.—Sent 30 Coss-lettuces to M^r^ Etty's little wall'd Garden to winter.

16.—Brewed half Hogsh: of milder strong-beer with only five bush: of malt, & two p^ds^ & half of Hops: made at the same time half hogsh: & 12 gallons of small beer.

17.—Trimm'd & tack'd the fig-tree, which is full of Young wood; & laid a long tender shoot from the stool to the Corner of the House to supply that part of the tree with fresh wood.

Very mild growing weather yet for the time of Year.

*Decem^r^* 19.—Made half Hogsh: of raisin-wine with one Hund: of Smyrnas, & half Hund: of Malagas; & put to them 13 buckets of water, each bucket containing three Gallons.

31.—The Year went-out, as it had continued ever since winter began, in a very mild way. There have been scarce more than two smart night's frost, & those early in Autumn: so that the Grass in pastures has kept springing the whole season; & the early, & hardy flowers, & plants are very forward. There has been a pretty deal of gentle rain; & now & then soft sunny days like April, which brought the flies, & other Insects out of their lurking holes.

DUNG BORROWED, 1760.

Jan. 10.—Of Berriman p$^{d.}$ . . .	2 loads.
Feb. 8.—Of Berriman p$^{d.}$ . . .	2 loads.
Of Kelsey p$^{d.}$ . . .	2 loads.
Kelsey carried out for us 2.	
Feb. 15.—Of Parsons p$^{d.}$ . . .	2 loads.
March 16.—Of Parsons p$^{d.}$ . . .	5 loads.
Of Berriman p$^{d.}$ . .	6 loads.
Of Kelsey p$^{d.}$ . . .	7 loads.
Kelsey carried out for us 2.	
June 3.—Of Kelsey p$^{d.}$ . . .	5 loads.
Of Berriman p$^{d.}$ . . .	3 loads.
Kelsey carried out for us 3.	

Garden-Kalendar for the Year 1761

Jan: 1.—Transplanted a polyanth-Narcissus, many of whose Cups were in bloom, into a large pot to set within doors.

2.—Finsh'd a new wicker melon-screen, & lin'd it well with straw, & made a border about four feet broad under it, & dosed the earth well with sand, & some ashes, & dung; intending to make it a border for early Crops, & to plant some Espalier pears along it, & to run a narrow brick-walk by the side of it.

3.—Brought-in two loads of hot dung for the seedling-Cucumber-bed; & many loads of stones for the Haha. The ground treads sadly for want of frost.

Sowed a long row of persicaria-seed under ye dining-room window. The wall-flowers begin to blow. Put some Cucumber-seeds in a pot by the parlour fire.

Jan: 5.—Made the seedling Cucumber-bed.

Warm foggy weather, with a very high Barometer.

6.—Tunn'd the wine:[1] there did not run-out sufficient to fill the barrel by one bucket full; which was squees'd out of the Chaff.

8.—Earth'd the Cucumber bed with mellow, sanded mould. The bed in fine moderate order.

10.—Sowed about 40 Cucumber-seeds. The bed promises well.

[1] Or as some would say, "racked it off." It was a very common way, if the wine was not enough to fill the barrel, to run some more water through the chaff (*i.e.* the raisin-husks) in order to increase the quantity, as the wine would not keep if the barrel were not filled.—[H. M.]

10.—Put seven bottles of rasp: syrop to ye raisin-wine.

12.—Tunn'd 8 gallons of good small raisin-wine in the vinegar-barrel. What vinegar is bottled, is very fine, & good.

14.—Plenty of Cucumbers up in the Hot-bed; & in the pot by the fire side.

Planted a row of Laurel-cuttings in the field-garden.

Hot-bed goes-on well: sunny weather for ye plants.

15.—Sowed a Crop of radishes, lettuce, & Carrots on the sanded border under the melon-screen. Transplanted some Cucumber-plants that came-up apace.

17.—Smart frost; which enabled me to plough the new garden after waiting the whole winter. Put more Cucumber-seeds into the bed.

19.—The frost continues: carted into the new Garden 20 loads of marl well dissolved; 7 loads of lime-Rubbish, & soot from the Malt-house; & a load & half of ashes. The ground began to thaw towards noon, and was much trodden, & kneaded before the Job was done.

Put the rubbish & ashes on the two lower Quarters, & the marl on the four upper ones.

24.—Long the mason finish'd the dry[1] wall of the Haha in the new garden, which is built of blue rags, so massy, that it is supposed to contain double the Quantity of stone usual in such walls. Several stones reach into the bank 20 inches.

The wall was intended to be 4 feet & an half high: but the labourers in sinking the ditch on inclining ground mistook the level, especially about the angle: so that at that part to bring it to a level it is 5 feet 8 inch: high, & 4 feet 6 inch: at the ends: an excellent fence[2] against the mead,[3] & so well fast'ned into the clay bank, that it looks likely to stand a long while. The workmanship, exclusive of casting the stones, cost £1: 8s: 10d.

[1] *i.e.* made without mortar.—[H. M.]

[2] No wonder that the Haha is still (1899) in an excellent condition.—[R. B. S.]

[3] There was no "Park" at "The Wakes" at this time.—[H. M.]

Jan: 24.—Cucumbers thrive well, & shew a rough leaf. Misty, still weather with an high Barometer. John finish'd Mr. Etty's wall-trees in 4 Jobs.

26.—Sowed about 14 Succado-melon-seeds to plant an early melon-frame, if they succeed. Cucumbers look finely; & begin to shew a second rough leaf.

Sloped, & finish'd-off the ditch of the terrass; & levell'd most of the terrass.

Spread the marle, & rubbish on the new garden: there is a good Coat of each.

Smart frosts for three or four days.

29.—Frost continues very smart. Finished cutting all the Alleys thro' the new Garden; & levelled all the terrass as far as it can be, 'till it settles. Cleared away the roots of trees in the meadow.

30.—Frost smarter than ever. Wheeled the dung that was left after paying the farmers out of the melon-ground. Trench'd a well dung'd plot above the earth-house for melon-loam; & turned some old melon-loam.

The heat in the Cucumber-bed declining, order'd the bed to be lined with 15 barrows of very hot-dung.

Beautiful rimes for several mornings on ye Hanger. It froze within to night.

31.—Carted in 10 loads of Hot-dung for the bearing Cucumber-bed.

Succado-melons begin to appear.

Dug-out all the under-ground dung in ye melon-Ground, & levell'd the Area.

Feb: 2.—The over-fierce lining scalded all the plants. Sowed more seeds.

3.—Potted the Succado-plants that were not much damaged.

Very high barometer, & settled fine weather.

Sowed more Succado seeds.

Feb: 5.—Made the bearing Cucumber-bed with 10 loads of good dung: it is, I think, too deep; being four feet odd inch: behind, & three feet odd inch: before. The bed is made full early, as the plants are but just peeping out of

y^e^ ground : but the dung being brought-in for the forward plants would not keep without making-up.

6.—Planted seven rows, about ⅞ of a Gallon of Winsor-beans in one of the middle quarters of my new Garden. This is the first crop in my new purchase, which was in so wet a condition as only to be fit for beans.

7.—Last sown Succados, & Cucumbers come-up apace.

9 : 10.—Levelled the terrass, & new walks so far that they will want but very small amendments before they are turfed. Fierce March-like winds from the west for many days, that had quite dry'd the Ground.

12.—The wind turning suddenly to the north, last night was the fiercest frost this winter.

Dug one of the lower new Quarters, which came up pretty well. Snowed hard all the Afternoon, & rain'd at night.

Feb: 16.—Put the mould on the Cucumber-bed, which seems now to be pretty mild.

Continual showers.

The first Succadoes have a perfect rough leaf. The second sowing are potted, & look pretty well.

19.—Planted-out the Cucumbers in their bearing beds, five plants in an Hill : each plant has a fair rough leaf. The bed seems very mild.

Heavy showers.

21.—Sowed a dung-cart & an half of ashes in the great mead. There was a very strong wind while they were sowing, which seem'd to carry away a great deal into the Air.

Sowed more Succados for fear of accidents ; & some small early Cucumber-seed.

24.—Made a seedling-Celeri-bed with one barrow of dung, & covered it with an hand-glass.

25 : 26.—Clear'd the meadow of faggots, & wood ; & levell'd the Ground, where the hedge was grubb'd.

March 2.—Sowed 12 Waverley-Cantaleupe-seeds in one of the bearing Cucumber-frames.

March 4.—Carted into the melon-ground ten loads of hot dung for the Succado-frame.

The Sundial

The Cucumbers thrive surprizingly, & have three Joints each. Earth'd up the hills a little to-day. The bed maintains a fine gentle, genial heat. The Succado melons thrive; & the forwardest begin to shew a Joint.

Continual stormy weather from ye west with small rain.

7.—The Cantaleupes come-up well; every seed.

9: 10.—Long finish'd the brick-walk along by the melon-screen; & Tull sowed the border with radishes, lettuce, & Carrots. Long made a large stone-drein also at the bottom of the new-garden across the walk into Lassam's ditch: it is so placed that in great floods the waters from every alley must run with a swift descent towards it.

10.—Cucumber-plants thrive wonderfully, & begin to throw-out wires. Some have five joints, & are stopp'd-down for runners.

Stopp'd some of the forward succades in pots.

10.—Sowed five more Waverley Cantaleupe seeds to supply in Case of accident.

Planted about 200 Cabbage-plants in part of one of the middle new-quarters.

An other levelling Job at the terrass.

Frequent showers.

11.—Made the Succado-melon-bed with ten loads of dung for one three-light frame. The bed is very stout; full four feet deep behind, & near three before. The frame & bed are more than six feet high.

Planted some double bloody-wallflowers, from last year's cuttings, in the border of the melon-screen.

Planted the 12 Cantaleupe-plants in six pots. Frequent showers.

13.—One of the plants that was stopp'd down shows a Cucumber at the foot of a runner. The Sun in a few minutes scalded Part of a leaf that touch'd the Glass.

14.—Mowed the Grass-plot the first time: there was a vast deal of Grass, which lined the Cucumber-bed.

Sowed a Crop of Carrots, parsneps, Coss-lettuce, Onions, radishes, & spinage, in the first lower Quarter of the new Garden; which raked, & crumbled in pretty good order.

16 : 17 : 18.—Finished leveling the terrass, & new walks; & dug the new borders, & Quarters.

Fine still, settled weather, with a rising Barometer, & wind to the East, & North.

The stopp'd Cucumbers have side-shoots with three Joints.

The five Cantaleupe-seeds all up.

March 18.—Sowed a gallon of dwarf marrowfat pease in one of the middle Quarters : they made just nine rows at four feet apart, & exactly fill'd the quarter. The mould was hardly mellow enough to drill them ; & they were covered in with difficulty.

19.—Dug the border at the back of the melon-screen, & planted a row of Holy oaks at five feet apart.

20.—Earth'd-down the succade-bed ; & put the hills into each light. Raised the Cucumber-frames. The plants are very large, & have vast leaves.

21.—Sowed six large basons in the field with double upright lark-spurs.

The sun at a few minutes neglect scorches the Cucumber leaves.

23.—Turned the Succades out into their bed, which seems very mild. The best plants are forward, & show runners. Planted besides one or two very stocky plants in each hill, which never have been potted.

Cleared the Cucumber bed of all pots ; raised the frames, stopp'd the plants, & earth'd the bed out to the frames.

Fine sunny weather.

Four pots of succades left.

The Cantaleupes are very strong in their pots, & show a rough leaf.

Prong'd & raked the Asparagus-beds.

Watered the Cucumbers over y^{r} leaves the first time.

25.—Finish'd turfing the terrass, & new walks, which took-up 8 loads, & an half of turf, being each twelve feet wide ; beside the slope of the terrass.

Hot, dry, sunny weather, which makes the turf stare, & chop.

First cucumber blowed before any male bloom.

Transplanted out forward lettuce from ye wall. Dress'd Rasps.

March 28.—The Succade-bed was beginning to burn it's mould a little : put some fresh mould round the bottom of the hills.

26.—Cast 18 loads of dung for the Cantaleupe-bed.

Planted some Catch-flies on the end of the bank next the house.

Planted four rows of fine large potatoes cut to pieces : each row three feet apart ; & each piece one foot.

30.—Grafted the tall peaked pear-tree in the orchard with Doyenne-Grafts ; & the standard pear in the new Garden with Crasan, & Chaumontelle Grafts. The Cions[1] came from Ringmer ; & the two latter sorts were canker'd & bad. Put an handful of salt in the loam.

Hot sunshine with a drying east wind.

Cut vent-holes in the front of the succade-bed to prevent burning.

31.—Planted some wild, & Garden Lathyruss in the bank at the back of the melon-screen between each two Holy oaks : they were two years old in the seedling-bed, & had long tap-roots between 2 & 3 feet long running into the carrion. The seed of the wild Lathyrus was gathered from a plant observed by my Bro : Tom to flourish most beautifully in the midst of a bush in the short Lythe.

April 1.—The Succade-bed continuing too hot, I ordered a pole to be thrust quite thro' the bed under each hill, so that one might see thro'. One hill being more furious than the rest I had the plants (top of hill & all) taken-off in a shovel, & the hill new made-up with cold earth. The plants grow, & are not yet injured.

1.—Grafted in two cuttings of M : Middleton's espalier-Crasane, instead of the Ringmer ones, which were canker'd & bad : left one Ringmer one.

Planted 6 basons of double larkspurs in the new-garden borders.

[1] Scions.—[H. M.]

2.—Sowed in the seed-bed in the melon-ground Battersea Cabbage seed, Savoys, borecole, leeks, Holy oaks, stocks, carnations, & sweet Williams.

Bright sunshine, with an east-wind, & very high barometer. The Ground is bound like a stone.

Hoed, pronged, & cleans'd all the home garden, & borders, during this parching season.

Ap: 3.—Planted a Garden Lathyrus on the new bank between every two asters, & p : sunflowers.

Stopped-up the vent-holes in front of the Succade-bed; left them open behind.

Most of the plants look well.

Sowed a great Quantity of Cucumber-seeds for the neighbours.

4.—Sowed tree-prime-roses, beet, & some seeds of a red Cowslip in a pot.

Sunny, burning weather.

Dress'd artichokes: in that hot weather the beginning of December they sprouted thro' their ridges, & continued growing very much the winter thro'; & have now vast greens.

Hoed & cleansed the grubb'd ground in the meadow.

April 6.—Made the Cantaleupe-bed for two three-light frames with 18 loads of dung. It is about 14 Inches wider behind than y^e^ Succade-bed, & about three feet deep.

7.—Turn'd out a fine pot of Succades into a hill joining to a former. The succades were in great danger of being burnt by the hot weather's setting the bed in a rage again: but by cutting & boring vents, & frequent opening the hills all seems now to be safe.

These plants have long runners that have been stopp'd again.

8.—The Cantaleupe-bed is in a great fury, & comes very early to it's heat. Frequent still fine showers after near a month's dry weather.

Cucumbers blow a great pace.

Made the annual bed with 7 barrows of dung for the biggest one-light frame.

9.—Sowed one of the upper quarters of the new garden with three quarts of marrow-fat dwarf pease, which made eleven rows at 3 feet apart, & just fill'd the ground. The ground, which had laid rough all the late dry scorching weather, being slack'd with the rain, raked, & fell to pieces in very good order; the marl seeming to do a great deal of good.

Apr: 11.—Put a finishing touch to the new Garden by cutting the edges of the turf round the water-tables, & terrass, & mending any patch of turf that was wanting.

Planted 24 cuttings of the fine bloody-wallflower. Those planted the beginning of last June came to little.

Sowed the annual-bed with dwarf sunflowers, Marvel of Peru, Basoms, China Aster purple, white, Fr: & Afr: marrigolds, Pendulous Amaranths, & Convolvulus minor. Sowed some China pinks, Convol: minor, & dwarf Sunflowers in the cold Ground.

15.—Planted a row of Laurels of 25s. p$^{r.}$ Hund: from the filberts against Parsons's down by the rod-hedge to the new part of the Garden; with a Laurustine between every two Laurels.

Fine gentle rain for 12 or 14 Hours.

Planted some laurels at the lower end of the new bank. The fine rains make the new turf take kindly to the ground, & close up it's Joints.

April 17.—Planted half hundred more cabbage plants; & some forward coss lettuce from under the melon screen.

Sowed the part of the meadow where y^{e} hedge was grubb'd, & the Haha with rye-grass: some white-Clover in the Haha.

18.—Made a low circular mount round the great oak in the mead, & Turfed it.

Earthed-down the Cantaleupe-bed, & hill'd the lights: found the bed very hot still.

Sowed more China-asters on the end of the Cantaleupe-bed. Perfect summer.

16.—Measured my new purchased piece of Garden, which contained forty two rods of Ground; & the old part fifty six: in all half an acre, & eighteen rods.

18.—Planted some cuttings of the black Cluster, & Muscadine Grapes.

20.—Made a frame, or cradle for annuals of rods, & pease-haulm about four feet wide, & eight feet long; & put into it about 16 barrows of dung, & grass-mowings.

April 20.—Made a small hot-bed for the small one-light frame to raise white-cucumbers in.

Set-up the urns.

21.—Turn'd-out six pots of Cantaleupes in the six hills: there were two plants in every pot except one. The plants are strong, & stocky; but seem to be somewhat injured by staying so long in the pots. The bed now seems safe from burning, having been made sixteen days. Sowed some white-Dutch . . . Cucumbers in the one-light frame. Cut the first Cucumber, which might have been cut some days before. More fruit were lost than usual: but now there are abundance set. The bees frequent the frames much.

Planted 12 cuttings more of the double wallflower.

April 28.—Planted five rows of dwarf-white-french-beans pretty thin in one of the new Quarters: used just a pint of beans.

Finding some of the Cantaleupe-plants look a little amiss, I prick'd two seeds into each hill.

Cutting N: E: Winds for many days.

Cucumbers sett at a vast rate: there are now about three brace fit to cut.

Sowed more white-Dutch-Cucumbers in the one-light frame: and a few large dark-green.

May 12.—Fine rain after a long dry fit.

Sowed a small crop of Roman-Broccoli.

Cucumbers in vast abundance, & very large.

The Succades offer fine fruit.

14.—Hot summer weather: the Succades swell & seem several of them to be set.

Began building my fruit-wall.[1]

15.—Disbudded the vines for the first time: great quantities of fruit especially at the end of the dining-room. The fig tree shows about 140 fruit.

Finish'd a forest-Chair on the bastion; & a plain seat under the great oak. Hot burning weather.

May 19.—Vast rain with a very stormy wind, which hinders the masons in their wall-building; & damages the vines, shrubs, flowers, & trees of all sorts.

20.—Made six holes for the large white Dutch Cucumbers, with one barrow of dung to each hole, & planted three plants under each hand-glass.

20.—My Brother Tho: & I went down with a spade to examine into the nature of those animals that make that chearful shrill cry all the summer months in many parts of the south of England. We found them to be of the Cricket-kind, with wings & ornamented Cases over them, like the House kind. But tho' they have long legs behind with large brawny thighs, like Grasshoppers, for leaping; it is remarkable that when they were dug-out of their holes they shewed no manner of activity, but crawled along in a very shiftless manner, so as easily to be taken. We found it difficult not to squeese them to death in breaking the Ground: & out of one so bruised I took a multitude of eggs, which were long, of a yellow Colour, & covered with a very tough skin. It was easy to discover the male from the female; the former of which is of a black shining Colour, with a golden stripe across it's shoulders something like that of the Humble-bee: the latter was more dusky, & distinguished by a long terebra at it's tail, which probably may be the instrument with which it may deposit its eggs in Crannies, & safe receptacles.

It is very likely that the males only make that shrilling noise; which they may do out of rivalry, & emulation during their breeding time; as is the Case with many animals.

[1] A small piece of Gilbert White's fruit-wall with the stone commemorating its erection [G. W.] still remains standing, and is well cared for by the sympathetic owners of "The Wakes," Mr. and Mrs. Paxton Parkin.—[R. B. S.]

They are solitary Insects living singly in Holes by themselves; & will fight fiercely when they meet, as I found by some which I put into an hole in a dry wall, where I should be glad to have them encrease on account of their pleasing summer sound. For tho' they had express'd distress by being taken out of their knowledge; yet the first that had got possession of the chink seized an other with a vast pair of serrated fangs so as to make it cry-out. With these strong, tooth'd Malæ (like the sheers of lobster's claws) they must terebrate their curious regular Holes; as they have no feet suited for digging like the mole-cricket. I could but wonder, that when taken in hand, they never offer'd to bite, tho' furnished with such formidable weapons. They are remarkably shy, & cautious, never stirring but a few inches from y^e^ mouth of their holes, & retiring backward nimbly into them, & stopping short in their song by that time you come within several yards of y^ir^ caverns: from whence I conclude they may be a very desirable food to some animals, perhaps several kinds of birds. They cry all night as well as day during part of the month of May June, & July in fine weather; & may in the still part of the night be heard to a considerable distance; abounding most in sand-banks on the sides of heaths, especially in Surrey, & Sussex: but these that I caught were in a steep, rocky pasture-field facing to the afternoon sun.

21.—Frequent showers, & a strong wind.

Sowed a Crop of large white-French-beans.

22. There are about 12 brace of Succade-melons set; the largest of which are about the size of a pullet's egg: & two Cantaleupes, which seem to be secure.

May 27: 28: 29.—Vast rains, with black, cold weather for many days.

June 1.—Went thro' with tacking the vines for the first time.

Cold black weather still, with a northerly wind, very unkind for all vegetation.

3.—Great rain.

4.—Planted-out 2 hand-glasses of the large green Cucumbers; & a large pot of Savoys, & late-raised Cabbages.

8.—Cold black weather, which makes the Cucumbers pale, & ill-flavoured; & hurts the melons.

Drew first Carrots under the melon-screen.

The Rooks are perchers:[1] there are but two; & one of the old ones was some how destroyed as soon as they were hatched.

9.—Sowed the first Crop of endive.

17.—Great rain: rak'd-down, & planted the winding-border over-against the fruit-wall with tall annuals behind, & a row of China-asters before.

Cut-off a large Succade fruit that was rotted at a joint just by the stem of the fruit. It had firm seeds in it, & would have soon been ripe.

June 19.—Limed the vine-borders round the house.

Black weather without a gleam of sunshine for many days.

Prick'd out more Celeri. Planted more Savoys.

21.—Discovered a curious Orchis in the hollow shady part of Newton-lane, just beyond the Cross. It is the Orchis alba bifolia minor, Calcari oblongo; grew with a very long stem; & has been in flower some weeks. I brought-away the flower, & mark'd the root, intending to transplant it into the Garden, when the leaves are wither'd.

22.—Hot summer weather. Cut my Clover-hay.

Cut the first Succado.

Hot burning weather, which grew more & more vehement 'till the 25; & then a great deal of thunder, & lightning all night.

23.—Cut a brace more Succades.

25.—Cut an other Succade.

[1] There is no Rookery at "The Wakes" now, but Mr. Maxwell drove me over on the 5th of November 1899 to Newton Valence, and showed me a line of splendid fir-trees in which there used to be a Rookery within his memory. The birds have deserted this place also. Could Gilbert White's Rooks have been a pair of Carrion Crows (*C. corone*)?—[R. B. S.]

The annuals are sadly scorch'd by the heat.

The Succades, considering the long shady season they grew-in, & the early season of ripening, are good, & well-flavoured.

June 25.—Put up two loads of Clover-hay on the rick, & covered it well with straw.

26.—The vines begin to blow very fast.

July 4.—Rick'd-up the meadow-hay in good order.

6.—Planted-out leeks, savoys, & two plots of endive.

10.—Most of the Succades being cut, I ordered the plants to be watered in order to try for a second Crop. The finest Succades weigh'd about 20 ounces, & were very good.

There are two Cantaleupes only which are just near cutting: the rest are only now setting in great plenty.

Cut the first white-Cucumber.

Took-in the Cucumber-frames. The early Cucumbers are now full of fruit.

Saved seed from two fine Succades.

Perfect fine summer-weather.

The Succades have some second fruit in bloom.

12.—Cut the first Cantaleupe: it was a fair, well-emboss'd fruit, & weigh'd one ounce short of two pounds; but was pale-flesh'd, & not in so fine perfection as the best Succades.

16.—Cut the second Cantaleupe, a small one.

July 16.—Trench'd three rows of Celeri.

Raised the melon-frames to give the roots a little room. There are plenty of Cantaleupes; & a good second Crop of Succades.

Large white Cucumbers in great plenty; & plenty still on the old forward bed. Stewed 20 for dinner.

The Succades have some second fruit as big as hens eggs.

25.—Finish'd my fruit-wall, coping the two returns at the ends with stones of a sandy nature out of the old priory. The coping-bricks were full of flaws, & cracks, being made of earth not well-prepared, & instead of over-

hanging the wall, came but just flush with it: however, by using six that were broken-ended, we had just enough, & they may lie on the wall many Years.

Began delving the fruit-border which was trod very hard.

Finish'd peat-cart; the spits were in excellent order: housed four loads; & brought in all my wood: & two loads of sand; one for ye fruit-border, & one for the hot-bed earth.

July 25.—Hot, ripening weather for a long time.

Inoculated five budds of the double Haw-thorn on a common one: the budds were poor coming from a sickly tree, & did not part well from their wood.

27.—Look'd-over the melons, that were run pretty wild. There are about ten brace of well-grown Cantaleupes; & not more than two brace of second Succades; their haulm being damaged by over dryness.

Sprinkled all the plants within, & watered the boxes round; as the mould is uncommonly dry, & burnt, & the weather very scorching.

Large white Cucumbers bear vastly.

30.—Dress'd the fruit-border the second time with lime, & sand.

Trench'd the next year's melon-earth, & dress'd it with a good coat of lime.

The earth very dry, & parch'd.

Aug: 28.—On my return from Ringmer after three weeks & four days absence I found Tull had cut nine brace of melons. The continual sunny weather had brought on the Cantaleupes before I expected them, & made them come almost all in a week. They were divided among our neighbours, and were much commended.

I found the annuals very handsome & very strong; the Savoys strangely grown; & the endives very large. Tull had planted out rows of Sweet-Williams, & Stocks in my absence.

The vines were grown very wild; & have no fruit yet turn'd in Colour, notwithstanding the heat of the summer.

The best Cantaleupes weigh'd about two pounds & an half.

Aug: 29.—Cut a Cantaleupe, which prov'd a very fine one. Weigh'd the largest of the great white-seed-Cucumbers: it's weight was three pounds & 14 ounces; & it measured 14 inch: & an half in length.

Tull has dug the fruit-border twice, & levelled it: but there has not been rain enough yet to moisten the stubborn Clods, so as to make them fall well to pieces.

29.—Sowed a small Crop of Coss-lettuce for plants to stand the winter.

Aug: 31.—Pruned the vines, that were much over-run with shoots, for the last time.

The Grapes just begin to turn Colour.

Tyed-up about 20 endives, which run very large this Year. All the buds of the double Hawthorn seem to be dead.

*Septem*r· 2.—Cut two Cantaleupes, very fine fruit. The Cantaleupes run to a fair size, notwithstanding the bed is very little wider than the frames. The Succades produced about 6 brace of good second-crop fruit, which ripen'd well, & are almost all cut.

4.—Cut a fine Cantaleupe; the last of any size or value. It prov'd a very curious one. Mark'd the best, & most double annuals for seed.

5.—Dug the fruit-border the fourth time after a great rain: it fell well to pieces, & seems to be well-mellow'd with sand & lime: 'till this rain it lay in great Clods as hard as stones, being so much trod by the masons & harden'd by a hot, sunny summer. It has three coats of good mould on it, & must be full two feet deep in good soil.

*Sept*r· 8.—Earth'd-up the Celeri for the first time. Cut the two last Succades: good siz'd fruit. Cut in the whole about 30 brace of melons of both sorts; many were very curious fruit.

It is to be observ'd that, as my frames are so wide, a crop of melons succeeds better when the bed is little

broader than the boxes, than when the bed has been lin'd-out, & earth'd down to the Ground. Because when the bed has been made so extensive in my strong soil the more delicate sorts of melons have collected more moisture than was proper, & have been liable to mouldy & rotten bines: but now with a narrow bed there has been no decay in the plants, notwithstanding there have been frequent great showers the summer thro'.

9.—The grapes now turn a great pace.

12.—Hous'd the lights, & took the melon-frames to pieces. Hot sunshine with cold dews.

18.—Dug the fruit-border for the last time, & levell'd it for planting. It is in fine mellow order, & falls very fine, having been dug five times; & dress'd with three Coats of sand, two of lime, & one of morter-rubbish.

It now lies-up within four inches of the upper Joint of the stone part of the wall.

Sad wet black weather for a long time; & some very heavy rains. The Grapes come-on but poorly.

*Septem*r. 28.—Planted Sweet-Williams, & pinks alternately on the new bank.

Earth'd up the Celeri the second time.

Fine settled weather after above a month's cold wet season.

Some little Succades, secured under hand-glasses, still continue to ripen.

28.—Made 18 quarts of elder-juice, & put to it 36 pounds of 4½ sugar, which made 29 Quarts of Syrop. *Mem:* two gallons & half of pick'd berries, moderately squeesed, produced about a gallon of Juice.

Octob: 7.—Planted-out in a bed to blow 60 Carnation-plants, & 80 stocks: the best are to be removed into borders.

*Octob*r. 14.—Now the Grapes are good, notwithstanding the vast continual rains.

The drein that goes from the bottom of the new-gardeu under the walk, & fruit-wall runs apace.

21.—Dry, fine weather.

Planted 130 of Cabbages in the new Garden at two feet apart to stand y^e^ winter.

22.—A very white-frost with thick ice.

24.—The ground being very dry I planted my bulbs; a row of Hyacinths above 60, & a few Tulips, & polyanth-Narcissuss on the edge of the fruit border: a row of tulips, & polyanth-Narcissuss, Cornflags, & Jonquils next Parsons's: & two rows of Crocuss under the buttery-window. Planted a large bed of Nursery-ofset-bulbs in a bed by themselves.

Planted-out against Parson's, & under y^e^ Buttery-window several of my fine bloody-double-wallflowers. Just before I finished came a vast rain.

Nov^r^. 2: 3.—Planted two standard-golden-pippens in the old orchard; & 12 small crab-stocks in the nursery. Took-up & removed the things in the nursery, & planted them in regular lines three feet apart. Dug-up & planted 6 pear-suckers for stocks.

Sanded, dung'd & trench'd the next year's melon-earth a second time; it was dress'd once with sand & lime, & falls now very mellow.

Dry, soft, delicate weather. Grapes continue very good still.

5.—Planted four rasp-plants from Chidbury-hill Wilts at the nearest end of the rasp-border, & several slips of pyram: Campanulas in a Nursery-bed.

7.—Planted one Quart, three rows, of small early beans in a Quarter of the new Garden.

A smart frost with Ice.

Dress'd the basons for the espalier-pears with mortar-rubbish; & laid some rubbish at the bottom of every bason.

13.—Planted a quart more of early beans.

Decem^r^. 15.—Brewed half Hogsh: of moderate strong beer with 5 bush: of Rich: Knight's malt, & two p^d^. & half of hops. What was brew'd in the same barrel last Dec^r^. was excellent.

*Decem*r· 17.—Made half hogsh: of raisin-wine with hundred of Smyrnas, & half hundred of Malagas; & put to them 13 buckets of water, each bucket containing 3 Gal:

22.—Wheel'd-in 20 wheel-barrows of hot-dung to cast ready for a seedling-Cucumber-bed.

Vast quantities of rain have fallen the autumn & winter thro': & as yet there have been but a very few days of hard frost.

23: 24.—Vast rains, & floods.

26.—Made an hot-bed for the biggest one—light frame with the 20 barrows of dung.

Planted a Dutch-medlar, & a Service in the old orchard; & a mountain-ash in one of the basons in the field.

Vast rains.

30.—The bed not coming to it's heat from the vast wetness of the Dung, I order'd in a load from Kelsey's; which with 10 barrows of my own made a new one.

By the negligence of Murdoch Middleton my wall-trees never came 'till the 26: they are in general good trees, were planted (considering the wetness of the season) in good condition; & in the following order, beginning from the terrass: Breda Apricot; sweet-water vine; Roman Nectar: Mr· Snooke's black-cluster vine; Roman Nect: white Muscadine vine; Newington Nectar:

Mur: Middleton's Sweet-water-vine; Nobless-peach; Mr· Sn: White Muscadine vine; Nobless-peach; John Hale's 2 Passion flowers, one at each end of the wall.

*Decem*r· 30.—Planted two Cistus's in Mr· Etty's dry garden; & a Phlomis, & an Halimus in my own. Planted some cuttings of the American black Poplar, & the Groundsel-tree in the Nursery.

DUNG BORROWED, 1761.

Jan. 3.—Of Kelsey dung p$^{d.}$ car. p$^{d.}$.	1 load.
He carried of our's 1 load. p$^{d.}$	
31.— Of Kelsey dung pd. car. pd. . .	6 loads.
Feb. 2.—Of Parsons p$^{d.}$ car. dung pd. .	4 loads.
March 3.—Of Parsons p$^{d.}$ car. dung p$^{d.}$	5 loads.
4.—Of Kelsey dung pd. car. pd. . . .	4 loads.
carried one of mine. p$^{d.}$	
March 26.—Of Berriman p$^{d.}$ car. .	2 loads.
Of Parsons p$^{d.}$ car. dung pd. .	3 loads.
Of Kelsey dung pd. car. pd. .	10 loads.
carried out of mine 3. p$^{d.}$	

Tablet in Garden of the Wakes

DRY FINE WEATHER

Garden-Kalendar for the Year 1762

Jan: 1.—Put about 20 Cucumber-seeds into the Hot-bed before it was come to it's heat: it has been made only two days.

4.—The bed comes to a bold heat. Exceeding wet weather; & the ground full of water.

There has been no settled dry weather since the end of August.

5.—Tunn'd the Half Hogsh: of raisin wine: there were about 3 gallons too much without any squeezing. Coloured it with 17 pints of Elder Syrop. The wine tastes very sweet. Added two more pints.

Jan: 5.—Cucumber-plants begin to appear: the bed is very warm.

11: 12.—A violent storm with vast rains, & floods.

14.—The bed, when covered much from the great rains, too hot still. Obliged to keep the light tilted anights. The plants a little damaged by the steam, & heat. Continue to sow more seeds.

14.—Bottled out the barrel of vinegar, which was very fine, & extremely keen; & put-in 8 gall: more of strong small-wine.

20.—Cucumber-plants have a rough leaf. Shut the light down quite close to-night for the first time. The mercury mounts very high.

26.—Brought in ten loads of hot dung for the bearing Cucumber-bed. Bright sunny weather & dry pleasant frosts for many days. Trench'd my flower-bank, & some of the Kitchen-ground.

Feb: 1.—Sowed 8 Succade-seeds.

The Cucumber-plants look finely.

Frequent rains with a very high Barometre; & the Country in an unusual wet condition.

The cast dung heats furiously.

5.—Cold, dry, March-like weather for a few days, with a very high barometer. The ground being a little dry for the first time since last August, I sowed a small Crop of Coss lettuce, Carrots, & radishes in the Upper part of the melon-screen border, which was but in very poor cold Condition, notwithstanding the quantity of ashes, & sand that have been put on it. As to the lower part, the water appeared in the Clods while it was digging-up rough.

7.—A strong N : W : wind all night, which occasioned much the fiercest frost that has been this year, with ice full an Inch thick.

The paths are now dry, & white.

Lin'd the seedling Cucumber-bed (which begins to abate of it's heat) with seven barrows of dung. The plants look well, & show a joint.

Hill'd & earth'd-down the bearing-bed; &, as it comes but feebly to it's heat, lin'd it round with pease-haulm. High barometer, & a strong freezing down.

A good part of my new garden has been dug since these dry days: the marl has done great good in the Quarters, & makes them Crumble well. Dunged the flower-bank well, & the opposite border. Covered the roots of the new-planted trees with straw.

Feb: 10.—A violent fierce frost.

11.—Finding the fruiting-bed by great covering-up was much improved in heat, I planted the hills with 7 or 8 of my best plants each.

The plants have a large rough leaf, & some of them a joint; but have stay'd full as long in the seed-bed as will do them any good.

The new bed is at present warm enough; but the danger is whether such moderate heat will continue long enough to set the fruit well; & 'till the sun gets strong

enough to make the fruit grow. There are many fine plants left in the seedling bed.

12.—Sowed 14 Succade-seeds in the fruiting-frames; those that were sown in the seed-bed included, which never vegetated.

Strange sudden alterations from fierce frosts to heavy rains, & so back again.

Feb: 15.—The bed seems to be come to a good heat.

Succades begin to appear.

18.—The bed advances in heat, & rather draws the plants. Potted the Succades.

Nasty, wet, blowing weather.

19.—Sow'd 10 more Succade seeds.

Sow'd a box of Polyanth seed.

The sun, which quite forsakes the upper walk of the new garden about the end of Octob^r^ begins now to shine full along it about half an hour before it sets. The Hepaticas, Crocuss, snowdrops & double daisies begin now to make a very agreeable appearance as the first promise of spring. Warm moist weather, which makes the grass spring sensibly.

A shoot of a white vine, which I lately short'ned, bleeds pretty much.

The ground has never this winter been once covered with snow.

20.—Made an hot-bed in the rod-frame with 16 barrows of dung; &, after covering it pretty thick with mellow mould, sowed it with radishes.

Feb: 20.—Sowed two basons of Persicarias in the border against Parsons's.

21.—A most violent N : E : wind all the evening, & all the first part of the night, with a small, dry, drifting sort of snow, which drove thro' the tiles, & every cranny in a most extraordinary manner. The ground is but just covered except in drifted places. A very hard frost in the morning. Many people froze to death.[1]

[1] Evidently a "Blizzard," as we should call it now.—[R. B. S.]

24.—Severe frost with heaps of drifted snow on the Ground. A high barometer.

The Cucumber-bed steams very much; & it has been so very cold lately, that there has been very few opportunities of giving the plants sufficient air. The plants look the worse for their Confinement.

25.—Finding the bed full hot, I pull'd-off the pease-haulm-lining at the back.

Sowed the Clover in Baker's hill all over with two dung-carts of Ashes.

27.—Sowed 8 basons of double upright-larkspurs along the border of the Garden-door walk, & in the border between the Cherry-trees.

Cold black weather: the snow has now laid a week in shady places.

The forward Cucumbers look very poorly.

March 1.—Fierce frosts a nights, & strong cutting winds a days with storms of snow.

Murdoch Middleton's pear-trees of last year proving canker'd, & distemper'd, he changed them; & I added some more sorts.

They stand now as follows in the new Garden, beginning from the first quarters on the side next the wall, then going down the middle quarters; & then by the side of the terrass.

N: Side of the Quarters next the wall:
Chaumontelle, & Virgoleuse:
S: side of D°. Crasane, & Doyenne:
The middle quarters:
S^{t} Germain, Brown Bury, Doyenne:
Up the side of the terrasse:
Autumn Burgamot; & Swann's egg.

There are also at the inner ends of the wall-quarters two Green-gage plums:

One Crasane-pear in the border of the walk facing the Garden-door: & one le Royal, & one Queen-Claudia plum in the melon-screen border.

March 2.—Planted a plot in Turner's with five

rows, three pints & half of early pease at four feet apart.

Very strong frost with thick ice: freezing air all day with flights of snow.

6.—This is now the 14 day since the snow fell; & it lies in great Heaps still under the Hedges.

There have been every day since cold cutting winds with a dark cloudy skie, & strong frosts every night.

The want of sun, & freezing air make the Cucumber-plants look very poorly, & quite stop their Growth.

Sowed a gallon, 11 rows of dwarf-marrowfats, which at 3 feet & half a part just fill'd a quarter.

Sowed two ounces of spinage.

The dug-ground is quite dusty.

10.—Pull'd-up the forward Cucumbers, which have never thrived since the fierce weather began; & planted some from ye seedling-bed which are better.

Sowed a Celeri-bed with seed from London, & some seed of a jagged-leaved sort from Mr. Missing.

Planted some Spanish-Chestnuts from Mr. Roman,[1] & some variegated Sycamore-keys from bro: Tom. Sowed a bed of Leeks. This is the 18th day of the frosty weather: very thick ice last night; & the snow still lies in cold shady places. A freezing wind.

March 11.—This is the 19 & last day of the fierce weather.

13.—Cut down all the wall-trees, & all the espalier pears. The two peaches seem unsound at the pith; all the rest are healthy trees.

Widened the walk down Baker's-hill, & turfed it. Planted several sorts of Asters in the new garden.

Soft spring-like weather for the first time.

15.—Carryed-in ten loads of Hot dung for the Succade-bed.

26.—Sowed Holy-oaks, sunflowers, Cullumbines, China asters, & savoys.

[1] The Rector of Faringdon, when Gilbert White was curate there.—[R. B. S.]

27.—Planted four rows of Potatoes; pieces from fine large roots.

April 6.—Sowed a bed of onions.

7.—Planted the succade-bed, that has been now made a fortnight, with some good potted plants, & some plants raised in the bed. The bed is full hot. Sowed the first Cantaleupes.

Sowed three rows of broad-beans.

Apr: 7.—The forwardest Cucumber about as big as the top of one's finger. The plants now grow away. Fine summer weather.

Planted holy-oaks, asters, & peren: sunflowers up the garden-hedge in Baker's hill.

8.—Sowed five rows of marrow-fat pease.

9: 10.—Brought-in 17 loads of hot dung for the Cantaleupe bed.

Sowed some white Broccoli-seed from Bp's Waltham. The Succade-bed is very hot; but the plants by being tilted a nights, & shaded a days look very well, & have runners.

12.—Sowed the Cantaleupe-seeds, & some Succades.

16.—Sowed some common Cabbage-seed, & some Roman Broccoli.

Made one hand-glass-bed to raise the large white Cucumbers.

Made the Annual-bed.

Potted the Cantaleupes.

17.—Sowed the annuals.

19.—Made the Cantaleupe-bed with 17 loads of dung: it is of a very proper thickness.

20.—Dress'd the Artichokes.

24.—Earth'd the Cantaleupe-bed, & hill'd it.

Made six hand-glass beds, with one barrow of dung to each, for the large white Cucumbers, & planted them.

The fruit-wall & espalier-trees are all alive, & begin to shoot.

26.—Cut the first Cucumber. There are plenty coming on.

Fine hot summer weather for these twelve days past, which has brought every thing on in a wonderful manner.

27.—Planted the Cantaleupe-bed, the two first Hills with Waverley plants, & the rest with plants from my own seed; all save the last Hill, which is planted with Succades to keep up a Succession.

The plants are beautiful & thriving beyond Common: but the bed is very hot & wants watching.

Very hot weather with the appearance of thunder.

April 27.—The first Succades fill the hills with their fibres, & have runners with several joints.

The fruit-trees against the wall push apace. I disbudded them to-day. The vines also are all alive.

May 3.—Sowed 6 rows of white-Dwarf-french-beans. The seed looks but poorly.

8.—The Succades begin to shew fruit.

Hot sunshine with very cold winds.

11.—The Succades have male bloom full blown.

17.—The Succades have now fruit in bloom.

22.—Some Succades seem to be set.

Brought some Geraniums, & a Sedum from Bp's Waltham.

Shady moist weather: prick'd-out plenty of Savoys, Celery, & Celeriac.

25.—Tack'd the vines, & disbudded them for y^e^ first time: the appearance of an abundance of fruit. Hot sunny weather for many days.

June 4.—Vehement hot dry weather for many days (a fortnight past) so that the fields & Gardens begin to suffer greatly. The early Cucumbers hardly bear at all tho' constantly water'd: & the melons swell very slowly.

Turn'd-out the white Cucumbers from under the Glasses.

June 8.—This long hot sunny season has forced some of the vines into bloom. They did not blow last year 'till about the 26.

Cut my Clover-hay.

The forwardest Succades nearly full-grown: the Canta-

leupes have abundance of fruit in full bloom, but hardly any male bloom.

A long dry hot season : the Corn begins to suffer.

16.—Cut first white Cucumbers from the hand-glasses. Hot burning weather still.

Began stopping-down the vines.

They are all in full bloom.

The Cantaleupes begin to set.

17.—This morning a valuable shower for an Hour & half that made the Cartway run.

Cantaleupes & Succades now set at a vast rate.

June 18.—Sowed four rows of white-dwarf-french-beans : soak'd the seed in water.

Sowed a small plot of Endive.

26.—Dry and hot weather yet.

Some bunches of Grapes, that used in general to be only just in full bloom, now so forward, that they are grown pretty well to the third part of their full size.

An abundance of Cantaleupes set : the vines are in good health ; & some fruit are the size of a large apple.

The Succades have but a scanty first crop, which is near cutting : but promise well for a second.

We transplant the annuals only a few at a time as they can be water'd. They are stocky in their nursery bed.

The fruit-trees against the wall, by being sprinkled over the leaves two or three times a week during this burning season, have been kept in a constant growing state, & have not one curled leaf.

A fine shower on June 20.

28.—A fine rain. Planted out some Savoys ; & more annuals. The pine-strawberries bear well.

30.—Hot summer weather.

July 3.—Cut first Succade.

5.—Set-out for Tidworth. During that week Tull cut 4 brace of Succades.

About the 10th M$^{r.}$ Cane began to cut his crop of Cantaleupes, which were extraordinary delicate, & of a good size.

On my return to Selborne the 24 I found 3 brace & an half of Succades cut, and ready to cut in the early box. The late hill of Succades are not come ; & the Cantaleupes are small & not very rough ; but the vines look healthy.

People are in the midst of wheat-harvest, & have cut some oats. Not the least rain since wednesday seven night. The country is burnt-up in a most deplorable manner, beyond what any middle-aged person remembers ; all the ponds & many wells are dry.

The grapes are uncommonly forward, & flourishing ; & the vines have made vast shoots.

July 28.—Cut the first Cantaleupe at six weeks from the setting: it was, I suppose, hurried by the vehement hot summer ; but was not very curious.

29.—Cut second Cantaleupe.

Cut the first Succade of the Hill in one of the Cantaleupe-boxes ; which came not 'till after two Cantaleupes ; tho' planted at the same time.

There usually is a fortnight difference in their ripening.

31.—The Succades of the latter hill come apace.

Those in the first box have been well watered ; & shew a pretty good second Crop.

Vehement hot weather still.

August 3.—Cut all the Succades of the farther hill, which came a great pace this very hot dry weather. Watered the hill well, to try for a second Crop. They were excellent.

4 : 6.—Frequent showers with a strong wind that blew down many apples & pears. The first rain. The rain improved M^r. Etty's wall-fruit visibly in a day or two.

Cut a large delicate Cantaleupe.

7.—Planted-out Savoys ; & sowed half p^d. of spinage, & some radish-seed.

The ground is moist'ned in but a little way.

Aug: 4.—Cut my field of oats.

10.—A fine rain. Sowed a plot of turnep-seed & trench'd out the first Celeri, four rows in Turner's Garden.

12.—A fine rain with some distant thunder.

The Grapes begin to turn Colour.

Planted in the new garden two trenches more of Celeri; & two of Mr. Missing's parsley-leaved Celeriac. Mr. Etty's Nectarines, & Peaches begin to shew their fine ripening Colours.

13.—Frequent heavy thundershowers with hot growing weather.

14.—Hot moist weather. The Succades have plenty of new wood, & shew several brace of promising second-crop fruit.

The grass-walks have in ten days quite recovered their verdure; tho' they were so deplorably burnt.

Planted 12 stock-gilliflowers from Mr. Etty. Eat a very curious Cantaleupe: it weigh'd two pounds, & an half, & was very dry, & thick in flesh.

Aug: 16.—Cut the last Cantaleupe. Many were very delicate, cracking both at Eye, & stem.

21.—Planted three rows of Polyanths on the bank next the Alcove: planted two plots of backward Savoys.

Septemr. 8.—The wasps (which are without number this dry hot summer) attack the grapes in a grievous manner. Hung-up 16 bottles with treacle, & beer, which make great havock among them. Bagged about fifty of the best bunches in Crape-bags. Some of the forwardest bunches are very eatable, tho' not curiously ripe. Mr. Snooke's grapes were eat naked to the stones a fortnight ago, when they were quite green.

There are about 3 brace of second-crop Succades, which will come in good time if the weather proves good.

Frequent showers since the 4th of Aug: now a promise of dry weather. The fields abound with grass as if there had been no drought this summer.

Septemr. 18.—Delicate autumn weather for a fortnight. Began eating the grapes, which are good, but not curiously ripened yet.

By means of bottles & bird lime I have prevented innumerable swarms of wasps from doing the grapes any considerable damage. They are reduced now to a very

moderate number ; not more than appear in common Years. Gather'd some nonpareils & golden-rennets, which are very fair, & ready to be laid up, being a fortnight at least earlier than common.

Cut a decent second-crop-succade.

Walnuts & apples are innumerable this year ; but there are no small-nuts.

20.—Tyed-up a large parcel of endives : they are but small this year.

21.—Cut a succade.

23 : 24.—Exceeding heavy rains with tempestuous winds, which blowed down an abundance of apples.

Gather'd-in the Cadillac-pears : near one third were blown-down.

Cut-up a very good-flavoured Succade.

Octob : 5.—Trimm'd & tack'd the wall fruit trees for the winter. They are all alive, & healthy.

Planted-out some Coss-lettuce to stand the winter under the fruit-wall.

13.—Grapes very curious. The wasps begin to be very troublesome, so that we caught 200 of a day. Eat two very good Succades within these few days. Dry weather, with white frosts.

15.—Supply'd the row of Hyacinths on the fruit-border with several double blue, & a few very double flat-blowing flowers.

Very dry seasonable weather.

16.—Dug-up the Crown-imperials on the bank, & took-out a large basket full of roots, & planted only two roots in each bason.

Grapes very curious.

17.—First very great white frost.

23 : 24 : 25.—Vast floods. Vast damage in many parts.

26.—Plenty of Grapes, & very curious.

29.—A flight of snow for a few hours.

Nov : 1.—Grapes very fine.

3.—Gathered the last Grapes, which were above thirty curious bunches, from the vine over ye Entry door.

Planted four curious gooseberry-trees from Waltham, & two basons of rag-wort from Funtington.

Novr. 11.—Great snow.

Planted some very small Coss-lettuce against the fruit-wall.

Shut-up the Alcove[1] with straw doors for ye winter; & took-in the urns.

13.—Severe frost with very thick Ice.

Eat the last Grapes.

19.—The frost still continues very fierce. Bearing Ice for many days. Uncommon early frost.

The fierce frost continued eleven nights.

24.—Trimm'd & tack'd the vines, whose shoots are both smaller & shorter than usual: perhaps owing to the vast Crop, & very burning Year. However there is wood enough to fill the walls.

29.—Planted the border by the necessary full of tulips, Polyanth-Narcissuss, Double daffodils, & Jonquils.

Moved the two plum-trees from the melon-border to the rasp-border. They had taken poor root.

Decemr. 5.—Planted one hundred & a Quarter of stocky Cabbage-plants, to stand the winter. Made a strong rod-hedge against Parsons's Yard.

10.—Sowed three pints of small early beans. The ground was in fine order; there having been hardly any rain for a month past.

18.—By the favour of the long, dry weather I prevailed on Parsons to set-about cleansing the river course from Gracious-Street to Webbs bridge, which was quite choak'd, & in great rains occasion'd a very troublesome flood. We threw out about 50 loads of mud, & have open'd so free a channel, that the road is quite dry, & the water will have an easy passage as fast as it comes to those parts.

[1] Mr. Grant Allen assigns the site of the Alcove to the Bostal. I believe that it was at the end of Gilbert's mead, and the foundation is still to be seen in Gracious Street. Mr. Maxwell pointed out this piece of stone work, and related that Professor Bell had informed him that it was the foundation of one of Gilbert White's summer-houses.—[R. B. S.]

Finish'd a paved foot-path from the Butcher's shop to the Blacksmith's, above 70 Yards : it cost just one pound.[1]

Decem^r. 24 : 1762. Made a seedling-Cucum^r.-bed with two dung-carts of hot dung, which was in fine order, & had never received any wet since it was thrown-out.

27.—Very hard, still frost. Pleasant weather, & no rain for several weeks.

31.—Extream severe frost with a cutting wind.

Dung Borrowed for 1762.

Of Kelsey—Dung p^d. Car. p^d.	1 load.
Jan : 26.—Of Kelsey D : p^d. Car. p^d. .	7 loads.
Car. 3 of my own.	
March 15.—Kelsey Dung p^d. Car. p^d. .	5 loads.
Parsons Dung p^d. Car. p^d.	5 loads.
April 8.—Kelsey Dung p^d. Car. p^d. .	8 loads.
10.—Parsons Dung p^d. Car. p^d. .	9 loads.

[1] This path still exists. In these days it would have cost at least £10.—[H. M.]

Garden-Kalendar for the Year 1763

Jan: 1.—Sowed about 20 seeds: the bed is in very fine order. Very fierce frost indeed, which begins to reach things within doors. The wall-flowers seem to be much damaged.

There has been no fall now, except a trifling shower, since the 11 of Novem$^{r.}$ when there was a pretty deep snow. The ponds begin to get low.

Extream hard frost still. The Cucum$^{rs.}$ begin to appear.

Jan: 11.—Fierce frost still, but not very windy.

The sun has scarce appeared for many days: so that the paths & roads have been hard & dry all day long. The Thames, it seems, is so frozen, that fairs have been kept on it; & the Ice has done great damage to the ships below bridge.

Covered the bulbs with straw, & the Artichokes, & some of the most curious Asters: & put straw round the bloody wall-flowers.

Lined the Cucum$^{r.}$ bed a little: the plants look pretty well.

This frost began on Xmas-day.

15.—The frost more fierce than ever with vast rimes in the night, & sunny days. No snow yet. I have covered the wall-trees, & all tender things with straw.

The frost has been three weeks today.

17.—Carted-in & cast 10 loads of good hot dung for the bearing cucumber-bed.

Most severe frost still. There has been no rain since Nov. 11$^{th.}$ The country is all in a dust, & many people are obliged to draw water for all their Cattle.

19.—Vast rimes all day long for these two days without the least thaw.

20.—To day is 10 weeks since there was rain.

21.—Vast rimes still day & night.

22.—To-day the frost has been a month.

24.—Made my bearing-cucumber-bed with ten loads of very good dung.

The first-sowed cucumber-plants look very well for such a severe season, & have a rough leaf, & an other opening. I keep sowing more seeds every week. Very bright still weather.

25.—I measured in a new-dug grave in Faringdon Church-yard, & found the frost had enter'd the ground about 10 inches. Vast fog.

27.—This day the dry weather had lasted eleven weeks.

28.—The frost begins to slack.

Jan: 29.—Strong south-wind with rain, & a mild thaw. The frost began this day five weeks.

31.—A thoro' thaw with strong wind, & a great rain.

Feb: 5.—After ten days absence at Ringmer I found the Cucumber-plants in pretty good order; but the bearing-bed too hot to plant-in.

8.—Planted my Cucumber-plants in the bearing-bed, which seems to be pretty mild.

The plants are of different ages: the forwardest have a joint, & a broad rough leaf.

Wet blowing weather for several days.

Feb: 9.—Brewed half Hogsh: of strong-beer with 5 bush: of malt, & two p$^{ds.}$ & half of hops.

Used only rain-water to try the difference.

Added one bush: of malt, & made an hogsh: of table-beer.

12: 13.—Heavy snow for 14, or 16 hours.

14.—Deep snow notwithstanding the ground was so wet; & a pretty hard frost, & bright sunshine.

The cucumber-plants grow, & look very well; & some of them have two joints.

15.—A second deep snow in the night, which goes-off today with a swift thaw, & rain.

15.—Made half an Hogsh: of raisin-wine with one hund: of Malagas, & half an hund: of Smyrnas.

One basket of ye Smyrnas were pretty much candyed: the rest were pretty good. Put to the raisins 12 buckets of water, each bucket containing 3 gallons.

19.—Frequent rain, & dark weather in general since the thaw.

Sowed 12 Succade-seeds in the Cucumber-bed. Lined the bed round with hay to keep-in the heat. The plants look very green, & thrive.

The bed seems in fine gentle temper.

21.—Sowed two Jobbs of ashes of my own making; which with what few more I may make will manure the great meadow all over.

22.—Constant rains.

23.—The Succade-plants come-up well.

The Cucumbers thrive.

A very soft spring-like day.

25.—Sowed 8 rows of marrow-fat pease: the first crop on account of the frost & rain.

Planted a white muscadine-vine from Ringmer at the end of the Dining room: a moss-provence-rose from a layer in the border opposite the fruit-wall; & a monthly-rose in the same border. Mended the Laurustines against Parsons's.

Sowed ten more Succade-seeds: eleven of the former sowing look well.

Dry sunny weather for three days.

26.—Potted the first Succades, which are fine plants. The Cucumbers begin to fill the Hills with their fibres, & to want earthing.

26.—Sent a small flitch of bacon to be hung in Mr. Etty's smoke loft: it lay in salt six weeks; but two of them were fierce frost.

Lay'd several small twigs of the Moss-Provence-rose: the larger shoots do not root kindly.

March 1.—Planted about three Quarts of broad beans in the room of the small ones which were all kill'd by the frost.

Vast rains still. We are now entred into the 5th week of the wet weather.

The last-sow'd Succades are coming-up.

2.—Great rains for several days past: to day stormy wind & thunder.

There are vast floods about the Country: & incredible damage is said to be done in the Island of Ely by the breaking of the banks. It has been a very wet season now for near five weeks. The ground is so wet that nothing can be done in the Garden.

5.—Tunn'd the raisin-wine, which held-out exactly, leaving about a gallon for filling-up. Coloured it with twelve bottles of elder-syrop; & put to it one quart of brandy. I have usually put but a pint at the beginning.

March 5.—Made the Succade-bed with ten cart-loads of dung, brought-in the same day. The bed & frame are full seven feet high behind: somewhat the higher for it's being made by mistake full scanty for the frame.

Several of the best Cuc: plants are just ready to burst into male bloom.

They & the melon-plants thrive well, & have been earth'd twice. Potted to day the second-sown Succades.

Fine, sunny weather for two days.

The Passion-flowers at the ends of the fruit-wall appear to be much injured by the great frost, tho' they were in appearance well covered with straw.

6.—Two of the Cucumr. plants have male-bloom full-blown. Beautiful weather.

7.—Sowed a Crop of Carrots, radishes, Coss-lettuce, & parsneps altogether in part of one of the lower quarters of the New-garden. The ground is in good order. Planted a standard Orleans-plum, & a standard Autumn-Bergamot-pear in the Orchard next Baker's Hill. Beautiful weather.

Cucumbers blow male-bloom apace.

The Succade-bed begins to fume.

10.—Sowed a row of parsley.

Sowed an Ounce of Onion-seed in one of the new Quarters : the ground in excellent order.

Fine sunny weather for a week.

12 : 13.—Furious N : E : winds with so very keen an air, that things froze within doors in not much less degree than they did in January.

14.—Fierce clear frost, but a still air.

Sowed carrots, radishes, & Coss-lettuce under the melon-screen.

The Cucumber-plants first began to discover some fruit on the 13.

15.—Fierce still frost, & strong sunshine.

These frosts cut-down the wallflowers & Polyanths in a sad manner just as they are coming into bloom.

The Succades are stopp'd-down, & thrive vastly.

March 17.—Earth'd, & hill'd the Succades, the bed being very moderate in appearance.

Soft, spring-like weather.

Sowed a spot of Polyanth-seed on a border facing to the South : the seed was saved in 1761.

19.—Planted the Succade-bed with two pots of plants in each hill. Each pot contain'd two fine stocky plants, that have each two large rough leaves ; & have been stopp'd down, & show for runners. The bed seems to be mild ; & has been made a fortnight to day.

Matted-down the bed with three of my 9 new London-matts ; & trigg'd the lights a little.

A stormy west wind.

22.—Found several Cucumbers in bloom this morning. Wet windy weather.

24.—Sowed 18 Cantaleupe-seeds in the Succade-frame. They were saved from a fine fruit in 1756, & are very plump, & large ; & are the same with those from which M^r^ Cane raised such fine Melons last year at Tidworth.

Set several of the Cucumbers in bloom.

The bed rather declines in heat.

The Succades begin to grow, & extend their roots in their new hills.

Some of the young Nectarines are in bloom; & one peach.

The Hyacinths under the wall are blowing apace: some are blown.

25.—Gave the Cucumber-bed a strong lining of hot dung to set, & forward the fruit.

The plants had extended their fibres quite without the frames.

Planted 20 good Cauliflowers from Hartley[1] in a well-dung'd spot, & covered them with hand-glasses, & pots.

March 25.—Transplanted into a good mellow plot of Ground those few Coss-lettuces under the fruit-wall that survived the severe winter.

26.—Planted five rows of Potatoes quite across one of the middle quarters of the new-garden in well-dunged deep mould. The pieces were cut from large firm roots that had been well-preserved from y^e^ frost. If the pieces had not been planted 15 inc: apart, they would not have held-out.

Sowed a good large plot of Savoys; & a plot of leeks.

Fierce frosts with very thick Ice.

28.—Sowed London-Celeri, & M^r.^ Missing's Parsley-leaved Celeriac under an Hand-glass with two barrows of dung.

Earth'd the Succades (which had pretty well run their hills) for the first time.

The middle hill was hot; but there were no tokens of burning.

The young Cucumbers begin to swell, & seem to be set.

29.—Earth'd the Cucumber-bed for the last time.

One of the forwardest fruit is gone-off.

Removed the Cantaleupe seeds, that did not come-up so soon as they should do, into a warmer part of the bed.

30.—Moss'd the Cucumb^r.^ bed all over to see if that will

[1] Probably from Sir Simeon Stuart.—[H. M.]

promote the swelling of the fruit by keeping the bed moist & warm. It is a practice much in use among Gardeners.

April 1.—Sowed in the borders round the Garden 21 little basons of double upright larkspurs; from an ounce of London seed.

Sowed a plot of stocks from seed of my own saving: they came first from Ringmer.

All my stocks were kill'd last winter.

Sowed 18 more Cantaleupe-seeds: the last now come-up pretty well.

The Succades extend their fibres a second time without their hills; & have runners four or five inches long. Delicate soft dry weather. The ground works well.

April 2.—Sowed a bed of Sweet-Williams.

Earth'd Succades the second time.

Beautiful soft grey weather.

Sowed a few more Bentworth-Cantaleupes, & a few Succades.

Put a bottle of brandy at the time of tunning to the raisin-wine; & now an other to prevent it's working too long.

4.—Planted several sorts of curious Asters, & Golden-rods sent me by M^r. Gibson in the borders, & field-basons.

Potted the first-sown Cantaleupes, ten good plants.

5.—Cut the first Cucumber, a good fruit, to carry to London. The rest, several brace, are swelling-away; but are yet of no size.[1]

The Hyacinths are blowing-out apace.

7.—Sowed second crop of marrow-fats.

8.—Carted-in 17 loads of hot dung for the Cantaleupe-bed.

9.—Made the Cantaleupe bed.

[1] During Gilbert White's absence from home, as happened on the present occasion till the 21st of April, his "Kalendar" must have been kept by some one else, probably by his faithful servant Thomas. It is evident, however, that he re-wrote the items on his return home, as the whole of the MS. of the "Kalendar" for 1763 is in Gilbert White's handwriting.—[R. B. S.]

11.—Sowed a plot of white helebore-seed: & potted the Succades.

13.—Made 1 hand-glass bed, & sowed it with white-cucumbers.

13.—Cut 13 large, well-grown Cucumbers, which were sent me to London by the coach when they were two shill: apiece in town.

16.—Planted half hund: of Cabbage-plants.

18.—Sowed more savoys.

21.—Earthed the Cantaleupe, & annual beds.

22.—At my return from London found the Cucumber-bed full of fine fruit; & the Succade-plants well-grown; but not yet in bloom.

The Hyacinths are now in high beauty: there are many curious ones in the nursery that must be mark'd for transplanting.

25.—Earth'd-up the Succades for the last time: the plants are very stout; but do not shew any bloom or fruit.

April 25.—Sowed the annual-bed with Alton; & London-Balsoms, China Asters, African & French-Marrigolds, Pendulous-Amaranths, Marvel of Peru, & dwarf Sunfl:

26.—Stak'd and tack'd the espalier-pears, & plums; & eased, & disbudded the fruit-wall trees. Dry cold weather.

27.—Planted five hills with Cantaleupe-plants from Seed of my own: & in two hills where there were only two plants to a pot I put-in one more from Mr. Acton's seed. Planted the first Hill with Succades to keep-up a Succession. The bed has been made 18 days; but yet is hot, & must be tilted when covered; & well-watched in very hot sunshine. Mr. Acton's plants (from his seed which I gave him first) are in the first & second hills.

The Cucumbers bear wonderfully, & large well-grown fruit.

30.—There have been cut this month from four lights only above 40 well-grown Cucumbers.

Sowed some of Gordon's Celeriac (much commended) between the Cantaleupe boxes.

The Cantaleupe-hills by tilting a nights, & frequent waterings go-on very well.

Tyed those Hyacinths that are white with a pink-eye with a piece of scarlet worsted as a mark to save ofsets from. Mark'd the blue Hyacinths with a blue piece of worsted tyed to the sticks that stand before them.

May 2.—Sowed six rows (about three fourths of a quart) of white dwarf french beans in Turner's Garden. The Ground is very mellow. Extreme sharp wind with hail for these two days past.

Stopp'd-down the Cantaleupes, which are settled in their Hills, & seem past all danger of burning.

Layed-down several branches of the fine bloody wall-flowers. Many of the wallflowers were kill'd last winter: as the Artichokes seem all to be.

May 4.—Several smart claps of thunder, which appeared extraordinary in the midst of such cold weather.

Very white frosts every night.

6.—Made a row of Hand glass-beds, with one barrow of dung to each, for the white cucumbrs.

White frosts, & sunny days.

The succades begin to shew fruit.

7.—Planted the Hand-glasses with white-Cucumber-plants.

Weeded the brick walks in the Garden.

The Cantaleupe-plants take well to their Hills, & begin to shew runners.

8.—A strange tempestuous day, with violent thunder, storms of hail, & gluts of rain. Very cold weather before, & since.

10.—Observing that some of the Cantaleupes were a little of a yellowish hue, I examined the hills, & found that notwithstanding the cold black weather, & that the bed had been made a month, yet the mould began to be a little burnt. Upon which I gave them a good watering, & a second earthing, which will soon bring them right. The fibres were run thro' the hills; & most of them shew good runners.

One imperfect male-blossom of the Succades is blown-out.

11.—Added a pint more of brandy, in all five pints, to the last raisin-wine, which still hisses pretty much.[1]

13.—Lined & earth'd-out the Succade bed, which seem'd to be declining in it's heat.

Several male-blossoms are open.

Hot summer. The grass grows apace in the meadows.

14.—The Succades have now a fruit in bloom. The Cantaleupes, which seem'd a little injured by too much heat, by watering are pretty well restored to a good Colour.

15.—Planted about 40 late Cabbages in the new Garden.

Prick'd about 200 fine Savoy-plants from Mr. Etty's in the Garden near the tub.

25.—The Succades blow pretty well; but no fruit is set yet.

One Cantaleupe has a male bloom, & a weak fruit blown: the rest are in good healthy order.

One of the Newington-Nectarines has three fruit that seem likely to stand.

The vines on the House shew well for fruit: the Muscadine-vine (which was planted a cutting April was three years) promises to have 31 bunches of Grapes.

Continual cold N: E: Winds.

26.—Observing that the Succades were backward in setting, & went-off soon after blowing; I examined into the mould that lay on the lining, & found that it was so over-heated by a thick coat of mowed Grass as to be scalding hot, and quite unfit for vegetation. Took-off the grass, & trod-down the earth close to the bed, where it was sunk away, watered it very stoutly, & fill'd it up to the frames with good fresh earth.

[1] This raisin-wine was much in vogue in Selborne and the neighbourhood within my memory. The farmers and their friends would meet occasionally at each other's houses in the winter for a game of cards about six o'clock, and play till supper-time, raisin-wine being then taken. After supper the custom was to sit round the fire with a glass of gin-toddy, when each one sung a song or recited in turn.—[H. M.]

27.—Planted six rows of dwarf white french-beans in the new garden. The first crop are come-up pretty well.

27.—Earthed the Cantaleupes quite out, & raised the frames.

Cold, black, dry weather : no rain for a fortnight.

28.—Prick'd-out the first Celeri.

Added about half a pint more of brandy, in all five pints & an half, to the last made-wine, which hisses still pretty much.

Cold, bright weather.

June 4.—The weather has been dry, except one trifling shower, for these three weeks to day.

No Succades set yet.

The Cantaleupes thrive, & show fruit.

Water'd the Succades well at their stems.

Sunny, dry weather : rain is much wanted.

5.—The Succades now begin to set. The Cantaleupes have some fruit that promise for setting. The Succades this very dry Season wanted more water at their hills.

The fields & gardens begin to suffer by the long dry season.

Cold, dry weather with a high Barometer.

June 6.—Tack'd-up the vine-shoots.

11.—It is exactly a month to day since there has been any rain except a trifling shower or two that did not half lay y^e^ dust. The fields & Gardens begin to suffer ; & there is but a poor prospect of a Crop of hay ; & most people's old stock is quite spent. There have been great showers about for this week past ; but we have had none of them yet.

The Succades have now many brace set ; & there are a brace or two of Cantaleupes secure.

The Succades have lost a fortnight for want of more water this severe dry season. Widen'd-out the Cantal : Bed before & behind, & laid-on a good depth of earth.

Heavy showers now about.

13.—Only a few showers that did not lay the dust.

14.—Hot burning weather again.

14.—Potted two curious Pyram : Camp : one has 23 stalks, the other 17. They were so large that no garden-pot would hold them ; so were planted in large butter-pots with Holes bored in the bottom.

Several large roots were broken-off in the removal ; but possibly that loss may not affect the blowing.

15.—Vast rain at Alton ; but only a small sprinkling here.

The Cantaleupes set apace.

16.—Small showers that refresh the fields & Gardens a little.

The Cantaleupes set all their first fruit, & promise for a good Crop.

Some of the Succades are pretty well grown ; but they are all on second & third wood.

Planted-out the annuals, which are backward & weak.

Sowed Endive, & Coss-lettuce.

The vines are beginning to blow.

Today compleats the fifth week since there was any rain here except a few small showers lately, which never laid the dust. The grass-walks look rusty. There have been fine rains round the Country.

20.—Raised & earthed the melon-frames for the last time : the boxes are now even with the tops of the hills, & the beds are earth'd-down with a great depth of mould.

The Cantaleupes continue to set well ; & the single Hill of Succades : hardly any of the first fruit has been lost. But they have had a deal of water this burning season. Prick'd-out some of Gordon's Celeriac, & some Common Celeri in the shady end of the melon-border.

Planted the bank in the new-garden, & part of the back of the melon-screen with annuals.

China-asters run very scanty this Year.

Some of the Succades seem to be full grown.

Trod-down the mould on the melon-bed, & spread some loose earth over it.

June 25.—This is now the sixth week of the dry weather. A small shower this evening that has not laid the dust.

Watered the Cantaleupes well, round the frames, & laid some short hay over the mould to keep it moist.

The Cabbages begin to look blue.

27.—Gather'd first marrow-fat pease.

The Corn begins to suffer by the long dry weather.

I Continue to water the melon-beds often.

The Grass-walks look exceeding rusty.

28.—Cut the grass in the meadow, & slip.

29.—Just as all the grass was spread-about came a great rain all day from the east: the only rain to do any good for six weeks, & three days.

30.—Vast showers with Thunder & hail.

Planted a plot of very forward Savoys; & a plot of later-sown ones.

The thunder-shower damaged the zigzag a good deal. The rain has thoro'ly soak'd the ground down to the roots.

July 4.—Tyled the Succades that are but a middling Crop. There is a second Crop coming on.

Took-off the frames from the early cucumbers, which bear still vastly.

Half the hay is housed on waggons in barns: the rest is in Cock.

Soft, showery, growing weather.

The Cantaleupes come-on unequally; some scarce swell at all, & some are full-grown.

5.—Rick'd the hay in very moderate order: the load that stood in Kelsey's barn was strangely damp, & heated; & was spread & dry'd over again.

6.—Finish'd stopping-down, & tacking y^{e} vines: they are in full bloom.

Planted a good plot of leeks in Turner's.

Showery, growing weather.

8.—Put a quarter of a pound of hops to the strong-brewed in Feb: which promises to be good.

9.—Showery weather still.

Putty'd the melon frames to keep-out the wet: housed the cucumber-frames. The plants that were in full bearing

are much check'd by being exposed at once to the open air: but their fruit is not much wanted, now the hand-glass-hills are in full bearing.

14.—Trenched-out four rows of stocky Celeri in one of the lower quarters of the new garden.

Showery weather.

13.—Mr. Tho: Mulso, & Lady, & Mr. Edw: Mulso & Miss Harriot Baker came to visit me.

19.—Finished planting-out 6 trenches of Celeri, & a second plot of Endive.

Cut the first Succade.

Very wet weather.

26.—Succades come very fast. Cut some tollerable Cauliflowers. Succades weigh 24 ounces, & are very dry. Continual showers, & a quantity of hay damaged.

Planted two rows of Gordon's Celeliac.

27.—Divided-out, & planted round the new garden Mrs. Snooke's fine double Pheasant-ey'd-pinks.

28.—Drank tea 20 of us at the Hermitage: the Miss Batties, & the Mulso family contributed much to our pleasure by their singing, & being dress'd as shepherds, & shepherdesses. It was a most elegant evening; & all parties appear'd highly satisfyed. The Hermit appeared to great advantage.

July 29.—A vast rain. The hay lies about in a miserable way.

30.—Cut the first Cantaleupe, which, considering the wet season, proved a good one.

Aug: 1.—Wet weather still.

2.—Took-up my Hyacinths under the fruit-wall: they have many offsets, & seem not to be damaged with the wet season.

3.—Terrible rain, & my neighbour's hay in a deplorable way. The rainy season has lasted just five weeks today.

Cut a fine-looking Cantaleupe, & sent it by the Ladies (who left Selborne this day) to Dr. Battie.

Cut several Succades: they want sun & dry weather.

4.—Vast rains still. The wet has lasted five weeks yesterday.

5.—Eat an extraordinary fine Cantaleupe notwithstanding the rains.

9: 10.—Two fine days: during which my Neighbours got-in their Hay rather better than was expected.

11.—Sowed a crop of spinage. Dry weather for three days; but distant thunder.

Aug: 15.—Sowed a plot of turneps.

Dry weather for some days.

16.—Showers again. Cut some fine Cantaleupes.

People are just entering on wheat-harvest.

22: 23.—Showery weather, & very little wheat housed: it begins to grow under the hedges.

Finished cutting my Cantaleupes, & Succades.

The grapes are very backward & small, having seen nothing but black showery weather for these eight weeks.

25.—M^r. Mulso's family left me.

26.—Now a long rain after two fine days. The wheat grows pretty much.

Septem^r. 4.—Now frequent showers after some fine days. There is a good deal of wheat still abroad.

7.—Now wet weather after some fine days. Much wheat abroad still.

10.—Tyed up endive. Showery, bad weather.

13.—Many days black wet weather.

The Grapes begin to change Colour.

Planted a row of stocks on the fruit-wall border, & under the dining-room window.

18.—Black wet weather.

The rainy season continued 12 weeks; since which there has been some delicate weather in the latter end of Septem^r. & Octob^r. that has made the grapes better than could be expected.

Oct^r. 18.—Planted an hundred of Cabbages to stand the winter.

24.—Dug up the potatoes which are large & fine. Trimm'd & tack'd the fruit-wall trees: the wet summer

had forced most of them into too much large willow-like wood, which will not blow so well next year as smaller.

The vines against the wall have got well-ripen'd shoots, & promise for plenty of fruit next year.

The garden abounds with good Celeri, & spinage, & a very fine sort of Savoys. Tolerable grapes in plenty. Hares or some vermin have gnawed almost all the fine Pheasant-eyed pinks, & the new-planted cabbages.[1]

30.—Now rain, & stormy wind after just three weeks soft, still, dry, summer like weather.

Nov: 4 : 9.—Vast rains, & floods.

Very fine grapes still : there have been no frosts to any degree.

16.—Serene, beautiful weather for several days, with the Mercury within half a degree of settled fair. Planted my Hyacinths in two rows all along the border opposite the fruit-border : dug-in first some well-rotted dung. Put the blue and best pink-eyed intermixed in front. Planted my Tulips, Narcissuss, & Jonquils in the border opposite the bank. Dug & cleared the banks, & dining-room-shubbery this fine season.

18 : 19 : 20.—Most severe frost indeed with thick bearing Ice, & a very cutting wind : a small snow. There has been a very mild season 'till now.

*Decem*r. 19.—Planted some Hepticas, fritillarias, & winter aconites from Ringmer, & some fine Persian Jasmines, & cob-nuts. Vast rains & floods of late.

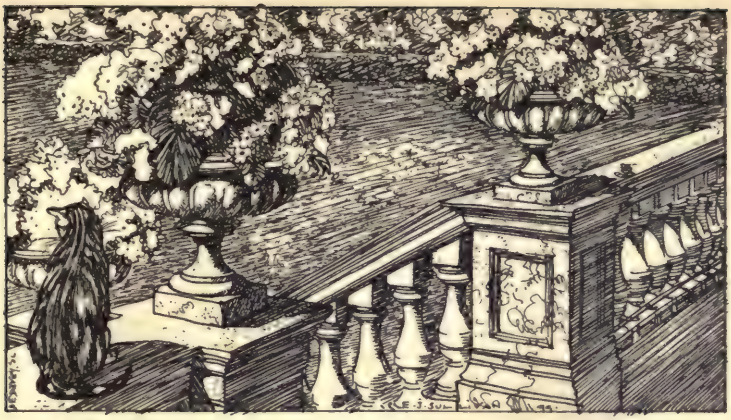
21.—Brewed half Hogsh : of strong beer with 6 bush : of coal-dry'd malt, & 2 p$^{ds.}$ & an half of hops ; the water all from the well.

Continual wet weather.

[1] I have known Hares to do this.—[H. M.]

DUNG BORROWED IN 1763.

Kelsey p^d. Car. Dung p^d. . . . 1 load.
Brought-in of my own . . . 1 load.
Jan: 17.—Kelsey p^d. Car. Dung p^d. . 5 loads.
my own 3 loads.
Parsons Dung p^d. . . 2 loads.
Jan: 18.—P^d. Kelsey his last five loads of dung by allowing him to take three loads from the dung-hill in the orchard.
March 5.—Kelsey Car. p^d. Dung p^d. . 5 loads.
my own 2 loads.
Parsons Dung p^d. . . 3 loads.
Apr: 8.—Kelsey Car. p^d. Dung p^d. . 10 loads.
my own 2 loads.
Parsons Dung p^d. . . 5 loads.



Garden Kalendar for the Year 1764

This year begins as the former concluded with continual heavy rains, & vast floods. There has indeed been little else but wet weather (a few short intervals excepted) ever since the 29th of June.

Jan: 5.—Made a seedling Cucumber-bed with dung that had been very much wash'd.

9.—Finding the bed come to a pretty good heat I sowed about 20 seeds.

13.—A most violent storm all night, that must have in all appearance done great damage: vast rains at the same time.

The Cucumbers are come-up and look well.

The wind blew-down the hot-bed screen.

23.—The second sowing of Cucumbers are come-up very well.

28.—Very stormy weather still, with great showers.

The Crocuss begin to blow.

31.—Vast rains, & storms of wind. Prodigious inundations all over England, Holland, & Germany. Lined the Cucumber-bed with many barrows of hot dung.

Feb: 7.—Brewed 45 Gallons of strong-beer with eight

bushels of malt dryed with Welch-coal; & three pounds & three quarters of good hops.

The strong-beer was closely covered down with sacks, while infusing in the mash-vat: & the yeast was beat into the beer several times, 'till it was put into the barrel. Made with the same malt Half an hogsh: of ale, & an Hogsh: of small. The strong-beer was made entirely with rain-water. Tunn'd the strong beer the third day.[1]

10.—Made a bearing Cucumber-bed with between eight & nine loads of good hot dung for two two-light frames.

Vast rains, & high winds still.

Sowed the great mead all over with about 30 bushels of my own ashes; & the little mead with 12 bushels bought of M^r. Etty.

13.—Bottled-out half an Hogsh: of M^rs. Atherley's port-wine. It had not, I think, quite so good a smell & flavour as usuall; & seem'd always to shew a disposition to mantle in the glass.

Feb: 17.—Put the Hills of earth on the Cucum^r. Bed: the earth by means of the long wet season was not in curious order.

18.—Planted the Cucumber-plants on their Hills. The plants are grown to two Joints, & are stopped down. The bed seems to be in good order.

20.—It has been now pretty dry ever since the fifteenth day. There have not been so many dry days for some months. The weather glass is very high, & the wind N: E.

21.—Sowed ten Succade-seeds in the Cuc^r. bed.

A very white-frost & bright sunshine.

The snails after so mild a winter are very numerous, & get into the bed & eat the plants.

26.—This is now the eleventh day of the dry weather: the roads are finely dry'd. A strong North E: wind, & a sinking Glass.

[1] Those of us who brew our own beer in these days use about 1 lb. of hops to a bushel of malt. In olden times the bitter flavour of beer was not appreciated as it is now, and their strong beer used to be very sour and intoxicating. The old farmers of fifty years ago used to be very proud of their strong beer.—[H. M.]

27.—A considerable snow on the ground. A severe frost this evening. The snails continue to annoy the Cucr. bed; & have destroy'd all the plants in one hill, & damaged several others.

Feb: 29.—Very hard frost, & snow on the ground.

The hot-bed goes-on but poorly: the plants don't grow, the snails damage them every night, & the succades don't come-up.

March 1.—Gave the hot-bed a good lining of hot dung. In general the plants don't grow but one begins to shew a runner. Blowing black weather, & snow on the ground.

5.—The frost has been so bad for a day or two past that the plants in the bed seemed in a very poor way, & the bed almost cold: but now the lining begins to take effect, & there is some warm sunshine that will set ym. to growing again. The snails continue to gnaw the plants tho' we kill numbers.

Sowed 12 Succade-seeds. A mouse devoured the first: indeed the bed would not bring them up. The frost has been now a week last saturday. The rose-trees, Crocuss, Hyacinths, & polyanths are much pinch'd by the severe weather.

10.—Very severe, black, cutting weather for a fortnight past, with several pretty large falls of snow, that do not lie long at a time. The hot bed succeeds very poorly.

March 12.—Sowed five rows of marrowfat pease, the first crop; & some radishes & Coss-lettuce under the fruit-wall: the border is very mellow.

Planted a row of laurels against Parsons's behind the filbert hedge. There has been now no rain for these three weeks: the landsprings are much abated.

15.—Gave the hot-bed a strong lining.

Planted six rows of broad beans.

Planted a row of Laurustines before the laurels against the street.

16.—Sunny, summer-like weather, & the ground in good dry order. The Hot-bed comes into good Condition again, & the Cucr. plants throw out runners.

Mossed the bed round the hills. The second sowing of Succades come-up well at last: there are only four plants of the first sowing.

Dress'd the border next Parsons's, & new-planted the perennials; & planted a row of sweet Williams in the front. Dress'd the Rasp bed.

The Crocuss, that seem'd to be so much coddled with frost, now make a great shew again.

March 17.—Planted half hund: of Cabbadge plants; the second planting.

18.—Very bright sunny weather with a vast white frost after several grey days. During this late dry weather the Garden has been cleaned & put in pretty neat order.

19.—Now rain after a fit of dry weather that would have lasted five weeks, had it held out 'till tomorrow. The long fit of wet that occasioned such floods & devastations all Europe over, lasted, with very few Intervals of dry between from June 29: 1763: to Feb: 15: 1764.

One of the Cucr. plants has got a male-bloom full blown. The Cucumrs. now thrive, & the melon-plants come-up well. Potted all the first-sown Succades, which were a little drawn, in three pots. The last-sown come-up very well. Soft, showery weather.

20.—Made the Succade-bed (the dung brought-in the same day) with eight loads of dung: it proves full stout enough, but is made rather too narrow, & longer than needs be. Blowing March-weather. Mowed part of the grass-plot for the first time: there was a great swarth of grass, that made a good lining for the Cucr. bed, which now works well: Several plants have male-bloom.

March 22.—Planted five rows of potatoes in a mellow rich part of the garden with pieces from very large sound roots that had been very well-preserved. The ground had been well dunged, but no thatch was used.

Sowed a deep, well-dug plot with a Crop of Carrots, Coss lettuce, & parsneps together.

Planted a row of pine, & Nova Scotia strawberry-plants: the bed is run to ruin & must be destroy'd.

"Mrs. Atherley's port wine... had not... quite so good a smell and flavour as usual."

Raked-down the Asparagus-beds.

Planted some basons in the field with Sweet-Williams. The garden is now mowed all round.

Blowing cold weather with some showers in the evening.

The Cucr. bed heats well; & the plants keep throwing-out male-bloom.

Made a hill with one good barrow of dung for an hand glass, & sowed it with Celeri-seed.

24.—Earth'd the Cucumber-bed: the plants extend their fibres very fast.

Sowed four pots with fraxinella-seeds.

March 28.—Sowed a Crop of Onions, & a plot of leeks. Planted Horse chestnuts in the nursery.

29.—Earth'd the Succade-bed: & sowed some white Cucumbers.

April 3rd.—Lined the Cucumber bed again.

5.—Planted-out the Succades. Two Cucumbers in bloom. Sowed sixteen Cantaleupe seeds, & 6 succade seeds.

7.—Planted the second Crop of pease.

13.—Potted the Cantaleupes: they are fine plants.

The Succades come-up poorly. The Succades in the hills are fine stocky plants, & full of runners. There are two Cucumbers of some size; & more setting.

16.—Sowed about 18 basons in the best garden with larkspurs, one ounce of seed.

17.—Rain & snow.

19.—Sudden transitions from hard rains to fierce frost, & ice.

21.—Cut a brace of Cucumbers, large fruit, the first this season.

Made the Cantaleupe-bed for six lights with sixteen loads of dung.

Many Cucumbers are now set, & coming on.

All the wall-trees had each a little bloom.

Planted about three doz: of wall-flower cuttings.

27.—Made the annual bed, & sowed it with African, & French-marrigolds, marvel of Peru, Iroquois-Gourds,

Pendulous Amaranths. Sowed Dwarf-sunflowers in the cold ground.

Sowed a crop of Savoys: & a little plot of burnet.

30.—Earthed the Cantaleupe-bed, & made the hills for the plants.

May 2.—Sowed four rows of white-dwarf-french-beans.

Planted-out the Cantaleupes in the Hills.

May 5.—On my return from Oxŏn I found the Succades in great vigour, with third wood of some length, that shewed the rudiments of bloom.

The Succades take well to their Hills, & look very green. The Cucumbers are full of fruit.

Many of the blue, & white Hyacinths are very beautiful indeed.

Bright summer-like weather; & all things in a very growing Condition.

May 7.—Earth'd-out the Succades.

Disbudded the wall-fruit trees, that were grown very rude. In all appearance they will have no fruit this Year.

Open'd, & painted the Alcove.

Cut the Laurustine-hedge in the Yard down to the Ground.

12.—One Succade-fruit is blown before any male-bloom.

15.—Great showers for several days with a S: W: Wind that damages the flowers & trees.

The Ground is well soak'd. The grass grows very fast, & the spring-corn comes-up well.

Many of the double-stocks are very beautiful.

The Cantaleupes throw-out good runners.

17.—Hot weather: things grow very fast after such fine showers.

Planted out 4 Iroquois-Gourds against the fruit-wall. The Cucumbers bear well.

Finished weeding the brick-walks.

The Succades are full of male-bloom, & begin to shew pretty good-looking fruit.

21.—Lined the Succade-bed with two loads of hot dung, one before, & one behind. The plants now throw-out

plenty of promising fruit; some of it is in bloom. Tacked the vine-shoots against the wall for the first time. The vines round the House shew for fruit; but not in such Quantities as for some years past.

May 26.—The weather for some days very sultry: to day was thunder & rain; & in some places very heavy showers; but not at Selborne.

June 2.—On my return from Fifield I found an abundance of Succades set; & some as large as Goose-eggs. The Cantaleupes (tho' the Haulm has not half-filled the boxes) are setting very fast. The very hot weather has drawn the stalks of the fruit pretty long.

4.—Earth'd-out the Cantaleupes & Succades to the full; & brought the mould in front quite down to the Ground: raised all the melon frames quite above the mould.

Planted 100 of Savoy-plants from Ludgershal in a nursery-bed: but was forced to water the ground very much before it would plant. The ground by means of the wet winter & late drying winds is as hard as a stone; so that there is no sowing or planting any quantity 'till rains come. On account of the hardness of the Ground the Lent-corn begins to want rain very much. The fine double stocks are still in full bloom.

Very cold, black, drying weather for these ten days past.

June 6.—Sowed a Crop of Endive: watered the Ground to make it rake.

7.—Prick'd-out a plot of Celeri.

8: 9.—Now fine rains, after the Ground had been bound-up like so much stone for some time.

Thinn'd-out, & tack'd the peaches & nectarines in a very regular manner; so that the shoots will have the benefit of the sun & air to ripen them. There was not one fruit to be found.

The trees are kept open in the middle, but make a very regular appearance on the sides.

12.—Sowed second crop, a pint of white dwarf-french-beans in five rows. The ground is still very hard, & dry;

the late rains were not plentiful enough to make it work well. The first sowing of french beans are tolerable.

Some few of the Burnet-plants have escaped the fly, & are got pretty large.

June 13.—Very hot summer weather.

15.—The vine against the fruit-wall from Mrs. Snooke's black sort is now in bloom before any of my black Grapes against the House; which confirms me in my suspicions that her sort was earlier than mine.

Turn'd out the white Cucumbers from under the Hand-glasses: they are full of fruit.

Hot weather; & the garden requires a deal of water. Finish'd tacking the vines.

18.—Mowed the greatest part of the great mead: but was deterr'd from finishing the whole by a vast tempest of thunder & lightening that lay along to the N.W.N. & E. all the afternoon. It thundered loudly for hours together; but not one drop fell with us. The heat, being reflected from white thunder-clouds, was unusually severe. The weather-cock stood all day plumb S., but the storm came up from the N.W. There is a very fine crop of Grass in the meadow. This day has burnt & scalded things in the Garden in a strange manner. Gave the Cantaleupes a good watering within the frames: but gave no water to the Succades, as many brace of them, at least ten, are full grown, & near ripening.

June 19.—The thunder-storm, which threat'ned so hard, sunk quite away in the night. A fine sunny day with a brisk wind at E.

20.—The same weather; & the hay makes at a vast rate. Carry'd four Jobbs to the rick.

21.—A Continuance of hot sunshine with brisk air. Carry'd four more Jobbs, all my hay in most curious order without one drop of rain.

This is now the ninth day of hot sunshine: so that the ground is greatly burnt; & the grass walks look very rusty. Nothing can be done in the Garden, which is like an heap of stones. Laid pease-haulm, & straw round

the outsides of the melon-beds to keep out the fierce heat. Water'd the Cantaleupes well round the extremities on the straw. They have several fruit about half grown; & several that never moved at all after setting: they now begin to throw-out fresh shoots, & fair fruit. The succades have had no water all this fierce sunny weather. The Cucumber-frames are beat-out of bearing by the Heat.

The hand-glass Cucumbers are shaded all day, & yet are injured by the intense sunshine.

There has been no weather to plant-out annuals: they are damaged by the hot season.

The selfsown Larkspurs all turn out single: the basons of double seed never came-up.

22.—Thunder in the morning; & a little shattering of rain, being the skirts of the storm: clear burning weather the rest of the day.

23: 24.—Little soft showers: but heavy rains at Faringdon, & all round us. Such gluts of rain near Odiham as did great damage to the Corn & hay. Vast damage in London, & round Reading.

25.—The grapes of Mrs. Snooke's black-Cluster fairly set. The black Hambro', Sweet-water, & Muscadine but Just coming into bloom. My own black-Cluster on the House but just blowing. Prick'd-out more Celeri: the ground is very little moistened. Stopped-down the vines against the wall. Began planting-out the annuals: & tyled the Succades; which are a fine plentiful Crop.

26.—Finished planting-out the annuals; & sowed a Crop of turneps mixed with Coss-lettuce. Frequent soft showers: but the Ground yet but little moistened.

June 28.—A good lasting rain that moisten'd things well down to the roots.

Rak'd-down the rough ground, & planted-out a large plot of Endives, & a plot of savoys; & a plot of leeks.

Potted-out two Pyramidal Campanulas, one with 14 stalks, & one with two.

The Martagons make a vast figure.

Cut the first white Cucumbers.

Sowed a row of curled-parsley.

The Grapes of Mrs. Snooke's sort quite large: some of my own just set: the other sorts just coming into bloom.

29.—Several showers. Planted more Savoys.

30.—Planted half hundred of common cabbages.

Cut the laurel-hedge against the necessary very neatly with a knife.

July 2.—Hot, burning weather for two days.

Cut the first Succade; but a small fruit.

Housed my Cucumber-frames, & Glasses.

3.—Cut the second Succade. Very hot weather.

4.—Cut a brace more Succades. Stopped-down, & tacked all the vines against the House: they are now in full bloom, & smell very sweetly.

Fine soft showers. Dug up the tulip-bed; & several Hyacinths from an old nursery.

July 5.—Planted some stocks from Mr. Budd's in a nursery bed. Stopped-down, & trimmed the Laurels against Parsons's Yard, & the street.

The Cantaleupes run vastly to bine, but do not fruit well. Some few Cantaleupes in every light are almost full-grown, & look very black, & rough.

6.—The first stout shower, that soaked the Ground well.

7.—Cut a Succade that was crack'd very deeply at the eye. The Cantaleupes usually crack so; the Succades never before. Sunny weather.

Cut two brace more, the most choice fruit of the whole Crop.

9.—Cut all the crop of Succades, three brace & an half, tho' they were not crack'd at the tail, to carry them to Fifield. Hot sunny weather.

Ordered the bed to be well-watered for a second Crop. Saved the seeds of a very delicate Succade, that grew close to the stem.

The Succades proved good at Fyfield.

21.—At my return from Fyfield I found the Cantaleupes greatly over-run with haulm, but no more fruit set. There

will be a slender crop ; not more than a brace to a light, & those but small. The Grapes on the fruit-wall are large (especially those on Mrs. Snooke's black Cluster) & much forwarder than those on the walls of the house. The peaches, & nectarine-trees grow too much, & run into willow-like wood.

Showery, hot weather for a fortnight past.

22.—Cut the first Cantaleupe : it proved a very good one, tho' under-sized.

Put some hops, & sand into the strong-beer brewed in Decemr. to fine it down.

The Iroquois-Gourds are very peculiar in their growth : they are short stocky plants without any runners. Some of them have variegated leaves.

The Pyram : Camp : are drawn by standing in the brew-house : put them in the Alcove. The white Cucumbers bear plentifully.

27.—Trenched three good long rows of Celeri in Turner's Garden. The Ground is in good order.

Showery weather. Planted a plot of Savoys from Hartley.

28.—Cut two fine Cantaleupes, that crack at the eye ; but they are undersized.

Aug. 1.—Cut a fine black Cantaleupe : it was crack'd at the eye. Sowed a large plot of Ground with prickly spinage, & Coss lettuce.

Showery weather with a strong wind that damages the Garden. Cleaned the vines of their side shoots.

Aug. 2.—Planted three more rows of Celeri in Turner's garden : the six rows make a large stock. Black, windy, showery weather.

The black Cantaleupe proved a curious one.

Thinn'd the leeks in the seedling-bed, & left the largest to stand as part of a Crop.

Dresh'd the bank, and borders. The Iroquois-Gourds shew pretty large fruit ; but have no runners.

The grapes on the fruit-wall are much larger & forwarder than those on the House. Saved a little Polyanth-

seed. Trimmed the side-wood from the shoots of the wall-trees, & tacked them down close as they grow.

There will be a small second Crop of Succades: 2 brace of small succades of the single hill are not yet come.

Many people have just began Harvest.

7: 8.—Two dismal wet days: vast quantities of water fell.

11.—Tyed-up 25 Endives; the first tying.

12: 13: 14.—Showery, bad harvest-weather.

Aug. 15.—Put a pint of brandy to the Half hogsh: of raisin wine made Jan: 1763.[1] In the spring it was got fine, & in good order: but now it is in a great ferment. I have beat-up the bung, and left it open.

Very wet weather still.

17.—A pretty fine day with a brisk drying wind. Many people were housing wheat all day, which went-in in better condition that (*sic*) could be expected.

18.—Vast heavy drowning rains. The white Cucumbers were in full bearing; but are damaged by the rains, & long, cold black weather.

The annuals are injured by the wet. The Grapes on the House are small, & backward; those on the wall are much before them.

The first sown french beans bear vastly: the latter don't come on.

24.—No rain since the 18: & this is the fourth most beautiful harvest-day that ever was seen; during which the farmers in these parts have quite finish'd their wheat-harvest. Those that had the most patience will have by much the best corn.

Planted two ofsets of a fine sort of Lychnidea, given me by Mr. Gibson, in my flower-border; & a sucker of a fine purple lilac in the nursery.

Planted half a doz. of my fine bloody wallflowers on the fruit-border: they are fine plants.

Cut a Cantaleupe-melon that is much crack'd at the eye. Figs are large & good.

[1] This made 6½ pints of brandy! See entry of May 28, 1763.—[R. B. S.]

The grapes on Mrs. Snooke's black cluster-vine just begin to turn : those on the house are small, & backward.

The vine Murdoch Middleton sent for Warner's black Hambro', seems, as it approaches towards ripening, to be some ordinary sort of white Grape.[1] The barometer is very high.

25.—Beautiful weather still ; but the Glass falls. The Canteleupe, tho' it had but little smell, was very fine.

Put a bottle more of brandy to the raisin-wine, which works much.[2]

Made & housed the second cutting of the shrubbery, & orchard in fine order, without a drop of rain. Housed two of the melon-frames, and put a few fruit under the hand-glasses. Tyed-up the second Crop of Endive : they are very large.

26.—Cut a brace of very fine-flavoured Cantaleupes, the last of the season : they were not large. Housed the last frame. The wasps were got to be very troublesome at the melon-bed, knawing great holes in y^e^ fruit. Set bottles of treacle, & beer.

27.—Very hot, summer-like weather : the glass after sinking a day or two, is now going up again. M^rs.^ Snooke's black Clusters change Colour apace ; & the white sorts begin to grow transparent. The wood of the vines ripens apace. The wood of the peaches & Nectarines ripens well, & begins to shew it's blowing budds surrounded with three leaves.

There are two braces of pretty good Succades under the hand-glasses.

29.—Sowed some more Coss-lettuce : those among the spinage, as well as the spinage, come-up but poorly. The grapes against the yard just begin to turn. A soft rain after ten hot, dry days.

Aug. 31.—Very hot sunny weather. Cut the first-tyed endives, they are delicately blanched.

The barometer is now very high.

[1] Again some negligence on Middleton's part !—[R. B. S.]

[2] See note on p. 358.—[R. B. S.]

Septem^r. 1.—Got a stone-mason to fix the stone with my name & the date of the wall in the middle of the fruit-wall.[1] When the mason came to chizzel a hole for the stone he found the wall perfectly sound, dry, & hard.

9.—Returned the raisin-wine (which had been drawn into a tun-tub two days) into the barrel again, & put-in one more pint of brandy :[2] there is left behind near three Gallons of grout.

Hot sunny weather still. The wine frets a little still.

7.—Tyed-up more endives : the third tying : the endives are very large, & fine. Earthed-up two rows of Celeri for the first time.

Beautiful weather still; it has now lasted three weeks. Harvest is finished in general; except some vetches, & barley that are not yet ripe. The Grapes on the fruit-wall ripen very fast. During this sunny weather fresh Cantaleupes, & succades set very fast since the frames have been taken away.

Sept^r. 12.—Now a great rain after three weeks, & three days delicate weather.

16.—Cold, windy weather still. The annuals are much damaged.

18.—Gathered the sweet-water grapes on the fruit-wall which are ripe; & some of M^rs. Snooke's black-cluster-grapes, which are very eatable; but not highly flavoured.

In the night between the 16 : & 17 : my melons & Cucumbers were pulled all to pieces; & the horse-block, three hand glasses, & many other things were destroy'd by persons unknown.[3]

[1] This stone still remains.—[R. B. S.]

[2] This made 8½ pints of brandy !—[R. B. S.]

[3] It seems difficult to imagine that Gilbert White could become an object of spite to any of the villagers, but he seems to have taken the outrage very calmly, as we read no more about it. Mr. Maxwell writes to me: "This sort of thing was of common occurrence even within my memory—say fifty years ago. Any person or persons you might have offended would damage your property in revenge, or set fire to your ricks if you had any; but after the police were established as an institution in the village, and the officers had settled down to their work, this kind of outrage ceased."—[R. B. S.]

22.—Fine settled weather: the Grapes are now good, but not delicate. The wasps are not very numerous; but have damaged some bunches.

24.—A very white frost, & Ice in some places.

Gather'd a plate of Grapes from the wall of ye House next the yard; these are the first that have been perfectly fine.

25.—A second very white frost. Beautiful sunny still weather with a very high barometer.

The annuals are much cut-down. Took in three of the Iroquois Gourd, which are very peculiar fruit: those from the variegated plants are of a yellowish Cast; those from the green-leaved of a dark-green Colour.

The succades that were taken-in before they were ripe, & hung to the beam over the Kitchen-fire, have ripen'd well; & proved of a good Colour & flavour; but are somewhat moist and flabby.

Dug the border of the fruit-wall, & took-away all the gourds, & annuals. Tyed-up more endives: they are vastly large; but somewhat damaged by the frost. There have been a few good mulberries; but they ripen too late. Earthed-up all the rows of Celeri; & two rows for the second time. The Mich: Daiseys covered with butterflies, and other gaudy insects make a very gallant appearance in the sunshine.

We have continued to catch the wasps, & hornets, which are not very numerous, with bird-lime. The late Cabbages, & savoys are in great perfection: the french-beans are quite cut-down, & destroy'd. The potatoes are good, but not very large.

Sep. 30.—A very sharp March-like wind from the N. many days with frosts and Ice. The ground is very dry; & the Clays have a fine season for wheat.

Sep. 30.—Wind & rain, & a low glass.

Octbr. 1.—Now a brisk wind, & sunshine.

Planted-out several double-bloody-wall-flowers under the fruit-wall, & melon-screen.

Planted several ofsets from the potted Campanulas.

Sent a basket of Grapes, & Cadillac pears to Lady Stuart.

6.—Gather'd in a moderate quantity of all the keeping apples: they are well-coloured, but small, being vastly thick on the trees.

The Grapes are now delicate, both white & red.

Fine, serene, summer-like weather: except now and then a small shower: the dry season has lasted seven weeks to-day.

7.—Beautiful clear weather.

20.—Fine soft weather intermixed with some gentle showers. This delicate weather makes most curious Grapes. The farmers put their wheat into the ground in fine order.

23.—Dry sunny weather with an high barometer.

Earth'd-up the Celeri for the last time: made use of some, which was well-blanched, & well-grown.

Oct^r. 24.—Bright, cold weather. Grapes in the greatest perfection.

26.—Planted 100 of Cabbages to stand the winter. Planted my Coss-lettuces, some very large, some very small, against the fruit-wall to stand the winter. The farmers carried out their dung from the melon-bed in a fine dry season. The weather very dry & cold. Gather'd 6 medlars, the first fruit that ever the tree produced.

28.—Very bright, cold, sharp weather with considerable Ice. Gather'd in a considerable part of the grapes, which are very curious. The dry fit has lasted ten weeks to day.

Nov^r. 1.—Planted out some stocks from Mr. Budds & a few from Ringmer. Dry still weather; but thick Ice in the morning. The ground is dry like summer. The ponds, & wells are exceeding low: many wells are quite dry.

Nov^r. 5: 6.—Put the tulips, taken-up in Summer, into the ground; & made a nursery of the best offsets. Dug up the Polyanth-Narcissus, & Daffodils, that had stood two years, & transplanted them: they were greatly encreased.

Mrs. Snooke's tulips are planted in the border where the two Cherry-trees stand. My own filled out the Border towards the alcove, & made a bed near the tub for water. Planted a row of Jonquils on the fruit-border near the Haha.

The rain that has fallen yet is very trifling, only just enough to make the ground slippery. To-day, the 6, a stormy wind, & sinking glass.

6.—Now a very heavy rain with a violent stormy wind.

7.—Gather'd in a large basket of Grapes, the last of the season : they are in fine order.

8.—A very great rain : so that the dry season might be said to last just eleven weeks from the 19 of August.

8.—Bottled half an hogsh : of elder-raisin wine, made in Feb : 1763 : it took a second fermentation last spring ; but is now very good except a little snatch of the brandy[1] which I put in to stop the working.

Novr. 6 : 8 : 10.—A great deal of rain.

14.—Trimm'd & tack'd all the trees against the fruit-wall. The peaches, & nectarines all promise to produce bloom : some have made shoots too gross & willow-like. Dug and laid down the border in curious order. Tack'd the vines some perpendicularly, some horizontaly. A smart frost in the morning.

Novr. 22.—Eat my last Grapes.

23.—Planted a Golden-pippin, & a Queen-Claud-plum, both standards, in the orchard : & a Portugal-laurel in the shrubbery. The golden-pippins planted in the orchard two or three years ago are both much annoy'd with the Canker, tho' they were planted on Hillocks to avoid the wet.

[1] See note on p. 358.—[R. B. S.]

DUNG BORROWED IN 1764.

Feb. 8.—Of Kelsey Dung p^d. Car: p^d. . 5 loads.
Of Parsons Dung p^d. Car: p^d. 2 D^o.
March 1.—Of Kelsey (no Car: to pay for this) 1 load.
19.—Of Kelsey Dung p^d. Car: p^d. . 5 loads.
20.—Of Parsons Dung p^d. Car: p^d. . 3 loads.
Apr. 11.—Of Parsons Dung p^d. Car: p^d. . 3 loads.
Of Kelsey Dung p^d. car p^d. . 4 loads.
Car: out two of my own car p^d.
Of Berriman Dung p^d. waggon-loads 2 car. p^d.
19.—Of Kelsey Dung p^d. car p^d. . 3 loads.
May 21.—Of Kelsey Dung p^d. car p^d. . 1 load.
car: of my own one. car p^d.

View of the Residence
at Selborne
of the late Rev. Gilbert White

Garden-Kalendar for the Year 1765

Jan. 4.—Made half an Hogsh : of raisin-wine with one Hund : of Malagas, & half an hund : of Smyrnas : one of the half hund : of Malagas was very indifferent, the rest were fine.

Put to the raisins eleven buckets of water containing three Gallons each. The Smyrnas cost 32s : p^r. Hund : the Malagas 30s.

From the eve of last Xmass-day to the eve of New-year's day was a very dry, severe frost : it went-off with a very mild thaw.

5.—Received a ten gallon barrel of mountain-wine from my Bro : Thomas.

12.—Great rains, & strong winds for several Days.

8.—Made an hot-bed for the one-light Cucumber seedling frame.

14.—The Cucum^rs. come-up very well ; but the bed is full hot. Moist, foggy weather.

Jan. 19.—Tunn'd the half Hogsh : of wine : it ran the barrel full, all save about one Gallon that was squeezed. Put to it 14 bottles of elder-syrop for colouring. Put-up on the raisins four buckets of water to make vinegar, & raisin-wine. Put one pint of brandy to the wine.

22.—Wet mild weather since new year's day.

The snow-drops are in bloom ; & the Crocuss swelling.

24.—Press'd-out the second run of raisin-wine, four buckets of water having been put-up after the first wine was drawn-off. Fill'd the vinegar barrel about three parts full : & there remained about 8 gallons for present drinking.

30.—A high barometer, & N : E : wind, with some dry days : but frequent fogs, & some sunshine.

The first-sown Cucum$^{rs.}$ have now a rough leaf. There is now a good Quantity in the earth-house of mould for the bearing-cucum$^{r.}$ bed, consisting of some old melon-mould, some from the bottom of the faggot-stack, & some earth cast-up by the moles on the Common ; all well turned & blended together. The Hepticas are well-blown : & some Crocuss are blown-out.

31.—Sowed my own ashes, which were sufficient for what used to be called the great mead. Bought ten bushels of M$^{r.}$ Etty, which sowed the slip.

Feb. 1.—Sowed a box with Polyanth-seed from Bp's Waltham said to be good. Dry but dark weather.

4.—Carry'd into the melon-ground 8 loads of hot dung for the bearing Cucum$^{r.}$ bed.

A very severe frost all day with a great rime. The ground was so very hard that the carting all day made not the least Impression. There has been some frost for several days.

Empty'd the dung hole.

7.—Very hard frost still, with great white dews. Things begin to freeze within. The sun shines hot & strong all day. The glass fell much some days agone ; but rises again. It is most probable snow fell farther north : here was a little scattering one morning. The sun now, just before setting, shines plumb into the Dining-room-Chimney.

9.—A very swift thaw.

10.—Rain all day : this second frost lasted just a week.

Feb. 12.—Made the bearing Cucum$^{r.}$ bed for two two-light frames of y^{e} 8 loads of dung.

The dung has never shewed any great Heat. The bed is of a good thickness, & is well made.

The Cucum$^{rs.}$ have one broad rough leaf ; & shew a second.

13.—Sent-down a large portmanteau full of all sorts of perennials to my Brother Harry at Fifield. Gave the

flower-bank a large dressing of rotten dung. Dug-up the bank at the end of the barn, to prepare it for planting.

16.—Hard black frosts for many mornings. Today frequent flights of snow. The Cucumrs. have a joint, & two rough leaves. The bearing-bed begins to heat well.

17.—A very severe frost with a scattering of snow.

There has never yet been snow enough at one time to cover the Ground.

18.—A very severe frost. Laid the Hills of earth on the Cucumr. bed. The bed seems in fine temper.

It froze hard all day in the shade. Stopped down the Cucumr. plants.

19.—A very severe frost; & the ground as hard as Iron; strong sunshine, & a freezing air all day.

Turned-out the Cucumrs. into their Hills: they were well rooted in their pots.

20.—A most severe frost, which came in a doors, & froze under my bed. Strong clear sunshine.

The ice that was broken Yesterday, could not be broke to day without great violence. It is difficult to cover the Hot-beds enough.

Cut-down two beechen-stocks at Lawn-acre for boards, & planks. They yielded 593 feet of sawn stuff; out of which there were three planks for a manger; the rest were all boards. The stock out of which the planks were cut proved faulty: so that they were not so good as could be wished.

Plunged the planks Yesterday in James Knight's pond.[1]

Hung an Ham of my own making in a paper-bag in the Chimney.

Destroyed 24 bullfinches, which lay very hard on the Cherry-trees, & plum-trees, & had done a great deal of Mischief.

21.—Hard frost & bright sunshine; but nothing near so severe as it was. The wind from full E: is turned full W:

Feb. 22.—Sowed about a doz: Succade seeds.

A thaw with a very sharp wind at S: E: the ground is

[1] See note to p. 261.

still very hard under the surface, & the Ice very thick on the waters.

23.—The mercury, which was very low yesterday, now rises again very fast; & the frost seems likely to go off without any fall at all. The ground would dig well, if the frost was out.

26.—The Succades are come-up extraordinarily well every seed. The frost went-off on the 24th with some rain. The Cucumrs. seem to be settled in their hills, & begin to shew runners.

27.—Potted the succades in four pots. A good deal of rain & wet melting snow.

28.—A great snow with a fierce driving wind from the West, which forced it into every cranny & opening; so that the peat & mould in the houses were covered. It lies in very unequal depths on the Ground, being drifted by the strong wind: but would have been about ten inches in general had the air been still.

The ever-greens were so loaded that they were weigh'd-down to the Ground. The wind was so strong, & the snow so searching, that the Hotbeds were not uncovered above two Hours all day.

The sun broke out in the evening: but ye Horizon looked very threatening, being of a very livid Colour, & promising more fall. The Mercury fell very low indeed in the night; & was quite concave at the top when I went to bed.

March 1st.—A pretty smart frost in the night; but a swift thaw all day with some rain. The snow lies very thick still; so deep that I could not get-out on Horse-back at the Northfield-lane end. The Glass very low still. The Cucumrs. look well, & the bed is not injured by the bad weather. Sowed twelve more Succade-seeds: those in the pots look well.

2. A frost in the morning, & strong sunshine all day. The snow is still very deep, & melts only by the Heat of the sun. Newton-lane has been quite stopp'd-up, & impassable. The Glass keeps rising but is still very low. The lane towards Rood is not passable.

3. Exceedingly bright sunshine; a frost in the morning, & a rising Glass. I found on going to Faringdon[1] that the snow had been much deeper than I was aware. Newton-lane below the Cross was barely passable. People more than 50 years old hardly remember such a snow.

March 4.—A smart frost, & very strong sunshine all day. The bees work very briskly on the Crocuss amidst the banks of snow. The snow melts only where the sun shines. The blackbirds begin to whistle.

5.—A great rain from the E: which melted the snow at a vast rate.

6.—Great rains, a flood at Gracious street.

7.—The snow is all gone, except under some Hedges; &c. Removed some of the Cucum$^{r.}$ plants, & put in some from the pots, which have a better Countenance.

The bed has been a little too hot.

8.—Brewed half an Hogsh: of beer with six bushels of Rich$^{d.}$ Knight's malt, & two pounds & three quarters of good Hops of the second year. When Hops were new 2 p$^{ds.}$ & ½ used to be sufficient.

Made an half hogsh: of ale & ½ hogsh: of small of the same brewing. The water for the strong was all rain & snow water; which stood some days in tubs to mellow & soften.

Put about a Quarter of a pound of Hops, and an handful of sand into the 45 Gall: barrel of strong-beer brewed Feb: 1764, to fine it down for use.

8.—Cast 8 loads of hot-dung for the Succade-bed.

Put a second pint of Brandy to the new-made wine: it is very quiet for its age.

10.—A vast rain and flood. The snow lies very thick still in some ditches, and hollow places.

11.—Tunn'd the strong-beer, having stirred-in the yeast two or three times a day while it stood in the tun-tub.

Hung the flitch of bacon in M$^{r.}$ Etty's Chimney.

14.—Great storms of Hail, rain, & snow, with several

[1] The bridle-path by which Gilbert White used to ride to Faringdon can still be followed.—[R. B. S.]

loud Claps of thunder. The farmers are much behind in their season.

18.—Vast rains; & nothing done in the Garden.

The Cucum^rs. have got male-bloom.

Sowed 12 more Succade seeds: those sowed last die in the pots: the first sowing thrives, & has a rough leaf. Turn'd the Succade-dung in the Yard: it was very hot.

19.—Farmer Parsons brought 60 bush: of tan from Alton for the Cantaleupe-bed. Vast hail storms with some thunder.

21: 22.—Continual heavy showers. The floods are much out. Cucum^rs. thrive.

March 23.—The Cucum^rs. are full of male-bloom. No fruit shows yet.

24: 25.—Vast showers. Gave the Cucum^r. bed a lining in front for the first time. Moss'd the bed.

The Apricot-tree has two blossoms blown-out; which seem to be the only promising ones it is likely to have.

Some Peach-blossoms are just ready to open.

26.—Made the succade-bed with the 8 loads of Dung which has been brought-in ever since the eighth of this month, & turn'd-once. As it seem'd to make but a shallow, weak bed, I laid about twenty bushels of tan on it.

A very great rain. The Country is in a sad, wet Condition.

27.—One of the Cuc^r. plants shews a fruit. A vast storm from the west, which blow'd one of the melon-lights quite off the frame against the espalier-plum-tree, but without breaking any panes. The Cuc^r. lights were in danger of being blown-off, & were secured by heavy slabs.

28.—Mowed the grass-plot the first time. A great rain. The succades decay in their leaves thro' the dampness & shadiness of the weather.

March 29.—1. Planted five fann'd Elmes to screen Will: Carpenter's necessary House; & five large Laurels in a curve to screen my own, which I propose to move to

the Corner next Parsons's Yard: & three elms in the corner of Parsons's Yard to conceal my own from the street.

Continual rains still.

30.—Put a little mould in the Succade-bed, & sowed sixteen Cantaleupe-seeds in it. The bed is yet full hot to lay-on the hills of earth.

Raked-down the asparagus-beds, & sowed five rows of pease; the first Crop of any kind put into the Ground this year. A stormy wind all day, & frequent Showers.

31. *& first of April.*—Stormy Winds, & great rains.

2.—Earthed the Succade-bed, & put-on the Hills.

The mould in a cold, clammy Condition. Planted three Dutch-Honey-suckles in the new-Garden.

Sowed 16 basons of double-upright-larks-spurs.

A very wet afternoon. A vast rain at night.

4. Planted three pots of Succades in their Hills: those that were forward were so damaged in their leaves by the long continuance of bad weather, that the second sowing were preferable, which shew only seedling-leaves.

Sowed more Cantaleupe-seeds in the Succade-bed: the first-sown are just coming-up. Sowed more Succade-seeds. Lined the back of the Cucum^{r}-bed with one load of Dung. Planted seven rows of Rasps in one of the upper quarters of the new Garden; three of white, & four of red. Planted five rows of beans, the first planting.

Made a Celeri-bed for an Hand-glass with two barrows of dung.

The peaches & Nectarines begin to blow-out.

Frequent showers still; & the Ground sadly wet.

Berriman brought 20 bushels of tan; in all 80.

The Cantaleupe-dung brought in is 12 loads.

Set some boards a nights against the fruit trees in bloom. Sowed some spots of Persicarias; & a drill of parsley.

April 6.—The Cucum^{r} is blown-out to-day. A vast rain last night, & great wind to-day. A very great flood

at Gracious-street. The springs are vastly high; & the Lavants[1] broke-out at Chawton.

Turn'd the Cantaleupe-dung.

7.—Tempestuous winds, with vast rains, hail, & thunder.

8: 9.—Stormy wind, & showers. The farmers are vastly backward in their season. Very little lent-corn sown.

Frequent Claps of thunder, & a very cold air.

April 12.—The first fine spring-like day, & no wet the whole day long.

Potted the Cantaleupes. Sowed a Crop of Carrots, parsneps, Coss-lettuce, radishes, onions, leeks, & savoys; & sowed one long row of finochia in a drill with a little rotten dung mixed with the mould. The ground worked as well as could be expected. The Mercury is shot up very tall; but the skie threatens again for wet.

Lined the Cucumber-bed with some grass-mowings: fruit blows every day.

The Nightingales begin to sing. The Hyacinths begin to blow.

Planted five rows of potatoes in Turner's Garden, & put old-thatch in four of the trenches, & peat-dust in one for experiment sake. Exchang'd roots with Mr. Etty, as his ground is so different: his sort came originally from me.

13.—Made the Cantaleupe-bed for two frames in the new Garden with 12 loads of dung that had been brought-in just a fortnight, & cast once, & 60 bushels of tan on the top of it.

It is a stout bed; & the tan lies at least six Inches thick. There have been three pretty fine days together, without any wind, & with very little rain. Some peaches & Nect: blow finely: some have little bloom.

Farmer Knight is to fallow, & plow Baker's Hill in an Husband-like manner, this summer, & to sow it with wheat at Mich: & to allow me the straw of the Crop for the use of the Ground.

The Year following he is to sow it with oats, & allow

[1] *i.e.* water-springs.—[H. M.]

me the straw: & I am to sow a Crop of S^t^ foin along with his Corn.

April 17.—Layed-down about 100 Laurustines; & grafted 6 crab-stocks with Cuttings from y^e^ Lunning tree. Made a new bed for aromatic Herbs.

Little rain for a week past; but shady mild weather.

18.—Bright, spring weather. Cut the first Cucum^r.^ a small one: there are many swelling away.

19.—Laid-on the Hills on the Cantaleupe-bed.

The earth is all prepared in the earth-house; because the mould will not work at all in the new Garden. Now heavy showers after several fine days.

23.—No Sun at all for several days; but black weather & frequent showers. It rains from all Quarters of the Compass. To-day several Claps of thunder. The Ground is in a wet Condition. Some thing bites-off the Cuc^r.^ bloom, & gnaws the fruit. The grass grows very fast.

April 24.—Turn'd-out the Cantaleupes into their Hills; they are fine plants, & well rooted.

The Succades succeed but poorly.

A soft, spring-like day, & some sunshine.

Caught the mouse that eat the Cuc^rs.^

25.—A very heavy rain.

26.—Extraordinary foggs, & moist air without any Sun.

27.—Cucumb^rs.^ come every day. Hot growing weather.

29.—Made an annual-bed, & sowed it with China-asters, Fr: Marrigolds, Dwarf-sunflowers, Chrysanthemums, & pendulous Amaranths.

Sowed some large white Cucum^rs.^ for the Hand-glasses. There have been two beautiful summer-like days together.

There are 99 considerable trees in Sparrow's hanger;[1] 94 beeches, 3 ashes, & two oaks: there are also three large oaks in the pasture-field adjoining.

May 3.—Sowed a second Crop of Pease in the ground where the turneps stood; sowed four rows of dwarf white

[1] This was apparently Gilbert White's property. It now belongs to Mr. Henry Maxwell. The trees have long since been felled.—[R. B. S.]

french-beans. Harsh, cold winds from the N : E : with an high barometer.

6.—Cut-down an Head of the Burnet, & gave it the Mare. The Heads are very large, & just offering for Bloom. Very fine dry weather.

May 7.—Planted half Hund: of Cabbage-plants for a succession. Planted some slips of the double wall-flower. The melon-plants grow but poorly.

Very dry weather; & the ground very much bound. The fleas eat the Savoys.

Cut some Heads of Burnet, & gave it the Horses, intending to observe how long it will be before they spring again. Each root has a vast head.

8.—Made four Hills for hand-glass Cucum$^{rs.}$ with two barrows of dung to each Hill. Very sultry weather; & showers about.

13.—Hot burning weather: the ground is bound very hard. There has been hardly any rain for 18 days. The peaches & Nect: by being sprinkled with water now & then this dry time, swell away. One Nect: tho' treated with the same care with the rest, is quite over run with blistered leaves & shoots; & must, in all appearance, be taken away.

The Succades in one Hill have long runners that have been stopped down. The Cantaleupes seem not to take well to their Hills.

All the tulips seem to have run from their original beauty.

May 14.—Rack'd-off half an hogsh: of raisin-elder made last January, which was not quite free from fretting. Let it stand one night in the Kiver, & return'd it into the same barrel well wash'd; with half a pint of brandy. The wine is strong & sweet enough at present. There came-out about a Gallon of Grout; so that the barrel is not full.

No rain yet, but a sinking Glass.

The melons grow now.

Stopp'd-down some of the most vigourous of the peach, & Nect: shoots, which seem to threaten to run to Willow-

like-wood. There is some fruit on each tree. All the trees save one look healthy. The vines promise a great deal of bloom.

15.—A very moderate rain, that just moistened things.

18.—Burning sunshine with a strong drying E. wind. I have sprinkled the peach, & Nect: trees twice a week during this drying weather. Most things want watering. The melons, which have been earthed and watered frequently, grow away. There has been rain but once for these three weeks.

21.—No rain yet; but strong sunshine, & a very drying East wind. The Ground is much parch'd on the surface. The Succades begin to shew the rudiments of bloom.

May 24.—Very harsh winds with some flights of Hail. No rain now, save one little shower, for a month past. The ground bound like Iron.

Earth'd-out the melons to the full in their frames.

Put 10 field-crickets in the bank of the terrass: made the Holes with a spit.

26.—Several small showers from the N.

27.—Now dry weather again with a very high Glass. The Succades begin to blow, & to shew some fruit. The Country is in great want of rain.

June 1.—No rain yet; but drying scorching weather. The corn, & Gardens suffer greatly. I do not remember my Garden to be so totally overcome with heat & dryness so soon in the Year. The walks are burnt-up past mowing.

2.—Thunder was heard at a distance.

3.—Drying winds, & fierce sunshine.

The succades have fruit blown.

4.—No rain yet: scorching, sunny weather. A sinking glass, & some tokens of showers.

6.—Thunder in the evening, & very black clouds to the E. & S.E. a fine rain at Petersfield, but not one drop here.[1]

[1] One might think from this that Selborne had a less rain-fall than the surrounding localities, but, owing doubtless to the proximity of the Hanger, we get an average of 32½ inches in the year, while Alton gets 31½ inches. Gilbert White's average for 1780 to 1788 was 36 inches, but the woods were more extensive then than they are now.—[H. M.]

7.—Lined the succade-bed: as the dung was very stale & dry we intermixed some layers of new-mown grass, & some weeds. The horses have been all so long at Grass that there will be no getting any fresh Dung.

8.—The Succade-fruit begins to set. We water the melon-beds a good deal this scorching weather. The drought has continued six weeks from the 6th. & is now entered on the seventh week. The succade-lining heats furiously.

10.—The weather continuing very burning, we water the melons largely. The Succades set apace, & the bines are of a good strength: the Cantaleupe-vines run rather weakly.

11.—Earthed-out the Succades to their full depth, & extent; raised the frame, & found the roots were got-out very strong. Planted the basons in the field with annuals which are weak & drawn: there was no planting but by dint of great waterings: & no making melon-earth but by the same expedient. The stones & bricks are so extreamly dry, that the mason, who is facing my stable, is obliged to dip them all in water. The grass in the walks breaks & crumbles under peoples feet as they tread.

The lining of the succade-bed is very hot, & throws a good heat into the bed.

12.—I set about five brace of promising Cantaleupes in the first frame: there are a few succades about as big as pidgeons eggs.

Finish'd tacking the vines, which have an unusual quantity of budds for bloom. Some shattering showers; & some large ones about.

June 13.—Sowed four long rows, one pint of white kindney-beans; & prick'd-out a large plot of Celeri. The ground was well-watered before anything could be done. Planted annuals in the borders of the Garden. Several very soft showers many times in the day; but not moisture enough to lay the dust, or make the eaves drop.

14.—Soft showers for four Hours this morning; & showers again in the evening. So that Yesterday the dry

weather might be said to last exactly 8 weeks, beginning the day after S^t. Mark.

Turn'd-out the white cucumbers from under y^e Hand-glasses : they are very strong, & shew fruit.

15.—Sowed a Crop of Endive ; two rows of fenochia, & some vast white kidney-beans from Lima.

Hot, sunny weather.

17.—Trimm'd-out the Succades, which were grown very rude & wild : the fruit keeps setting here & there, but not very fast. The bed is very warm, & has been pretty frequently water'd. The Cantaleupes seem to be setting ; the bines are still but weak.

Some little shattering showers, which refresh the leaves of things : but the ground is still as hard as ever. M^rs. Snooke's black-cluster Grape is beginning to blow before any of the other vines, even the white-sweetwater.

June 19.—Hot dry weather with an high Glass.

Cut my Grass : four mowers cut the great mead, y^e slip, & the shrubbery by dinner-time. Some of the Succades are almost grown, some setting, & some plants have no fruit swelling yet. Watered the outsides of the Succade-bed this very dry weather. Tack'd & thinn'd the Peach, & Nect : trees : there is but little fruit. Some of the trees run to too vigorous wood. The ground is strangely dry'd, & burnt. My Crop of Grass is very well for so burning an Year.

21.—Pick'd-up my Hay without one drop of rain ; tho' the Clouds, a sinking Glass, & an hollow wind threatned very hard : there were five jobbs.

Water'd the Crops very much.

22.—A N. Wind, a rising Glass, & all tokens of rain over for the present. Water'd the Cantaleupes : there are a good many fruit set in y^e first frame ; but a poor promise in the second.

Water'd the things again.

24.—Gave the Cantaleupe-bed a good lining with two waggon loads of dung ; & some layers of Grass from the orchard to set it in a ferment. The Cantaleupes now shew

a good many likely fruit. Very hot dry weather & no rain yet. We are obliged to water very much to keep things alive. The melons have had an unusal share of Water.

June 28.—A little rain; which was a noble watering at Fyfield for 12 hours.

July 5.—A little rain.

6.—On my return from Fyfield I found a large Crop of Cantaleupes set; & some above half grown: & a good many Succades coming-on: the forwardest are full grown. The bed is well lined out, & very warm; & the fibres are running very strong without the frames.

There have been fine rains round Andover & Salisbury: the verdure on the Downs is very delicate, & the sheep ponds are full of water. But when I came on this side Alresford I found all the ponds without one drop of water; & the turf & Corn burnt-up in a very deplorable manner; & every thing perishing in the Gardens. The peaches, & Nectarines keep casting their fruit. Cherries are now very fine.

The downs between Alresford & Andover are full of Burnet: so full in many places that it is almost the only herb that covers the Ground; & is eaten down very close by sheep, who are fond of it.

The Case is the same between Andover & Sarum where in many places the Ground is covered with Burnet now in seed: a Child might in those places gather a considerable Quantity in a day. It is worth observation that this herb seems to abound most in the poorest, & shallowest chalkey soil. On Selborne Common (a rich strong piece of Ground) it has not been yet discovered.

Near Waller's Ash I rode thro a piece of Ground of about 400 acres, which had been lately pared by a breast plough for burning: here the burnet was coming-up very thick on the bare ground, tho' the crown of the root must have been cut off of course along with the turf: this shews that it is a plant tenacious of life, since it springs from the severed root like plantain.

P^{d} Will Dewey for 8 Doz: of young sparrows.

The drought has lasted 10 weeks last Thursday.

The peaches, and Nect: have cast most of their fruit.

July 8.—A gentle rain most part of the day: & in the evening a great shower for about half an Hour that moistened things well. The cart way ran with water, which is more than it has done before since the 25th of April. This rain did not reach Faringdon or Empshot; so that it was of small extent.

9.—Planted-out a bed of leeks; and sowed a little spot with Batavian-Endive; & a quarter with turneps.

10.—Finished stopping-down, & tacking the vines.

The Grapes on Mrs. Snooke's tree as big as small pease. Harsh drying winds. The garden quarters not moistened enough to plant. Dug-up the Hyacinth-roots, which seem very moist considering the very dry time.

12.—Tiled 8 of the forwardest Succades. Hot dry weather, with cold dews at Night. My Cherries are now in high perfection. Large showers about yesterday; but a few drops only fell here. Some of the Cantaleupes swell very fast. It appears by the trial sticks that the bed has now as good a ground heat as most beds when made only five or six weeks; this must be owing to the lasting heat of tan. The Swallows & martins are bringing-out their young. Young partridges that were flyers seen.

July 13.—Farmer Knight, having plowed Bakers Hill twice before, stirr'd it across to-day. The weeds are all kill'd, & the soil is baked as hard as a stone; & is as rough as the sea in an hard Gale: the Clods stand on end as high as one's knees.

14.—Saw Pheasants that were flyers.

16.—A good rain for about three Hours. A great rain at Haslemere, where I was then. Several fern-owls or Goat-suckers flying about in the evening at Black-down House.

18.—Cut the first Succade-melon, a very delicate one; & deeply crack'd at the Eye: it had not one drop of moisture in it. Dry hot weather ever since the rain.

19.—Rains about, but none here. Hot ripening weather.

The dry fit has lasted 12 weeks yesterday. The wheat turns colour very fast. Added some earth to the melon-bed, where the lining was crack'd away from the main bed.

20.—Gather'd a good quantity of Burnet-seed from my plants. This plant sheds it's seed as soon as ripe; & therefore whenever it becomes a field plant, it must be cut as soon as it shews any tendency to ripeness.

The melon-bed has still a moderate Heat.

Some shoots of the Laurustine are blowing, others budded for bloom.

July 21.—The Glow-worms no longer shine on the Common: in June they were very frequent. I once saw them twinkle in the South hams of Devon as late as the middle of Septem^r.

The Redbreast just essays to sing.

Dry dark weather with an high glass. The garden dry'd-up as hard as a stone: the Crops come to nothing; & no opportunity of planting out the Autumn, & winter Crops. Cherries still very fine.

The haulm of the Cantaleupes (notwithstanding the continual drought) shews some disposition for rotting: in many parts it splits longitudinally, & heals up again. There will be a very fine Crop of Succades.

23.—Cut the second Succade, a small one. The field-crickets cry yet faintly. Hot dry weather still. No rain coming we were forced to put-out more Annuals in the dusty border; to shade 'em well, & to give them a vast quantity of water. The garden looks quite destitute of crops: no turneps will come-up; no Celeri can be trench'd, nor endives, nor Savoys planted-out. The ponds in most parishes are quite dry'd-up.

July 24.—Succades come apace.

25.—Some people have hack'd pease. Two most sultry days. Succades come by Heaps. The wells in the street begin to fail. Turn'd all the large Cantaleupes.

This day the dry weather has lasted just 13 weeks.

Some of the Succades crack very deeply at the eye: those are always delicate.

26.—Gathered a good basket of french beans; the first of the season. Put some tall sticks to the Lima-beans. Gave the Garden a good watering.

27.—Housed my billet in curious order.

Abraham Low has got above 50 bunches of grapes on a vine of my Sort, which is but three years growth from a Cutting.

Many samples of new wheat were shown this day at Alton market: the Corn was said to be very fine.

28.—The Martins begin to assemble round the weather-cock; & the swallows on the wallnut-trees.

Dry hot weather still, with a N. wind.

The Goldfinch, Yellow-hammer, & sky-lark are the only birds that continue to sing. The red-breast is just beginning. The field-crickets in the Lythe cry no longer.

29.—Eat a most curious Succade; & saved it's seed.

The beetles begin to hum about at the Close of day.

Trench'd one row of Celeri to try if it can be saved.

July 31.—Berriman began to reap in y^e^ Ewel-close. The best of the Succades being cut, I gave the bed a good watering within & without: water'd the Cantaleupe-bed on the outside. Sultry-weather. Wind S. for two days.

Aug. 1.—This day the drought has lasted 14 weeks. Sultry, cloudless weather. Planted-out four rows of loaf-cabbages, & two of Savoys between the Rasps in the midst of this burning weather, as there is no prospect of rain. The well sinks apace; we have watered-away 26 well-buckets in a day. No Endives can be planted-out yet. No rain at all since the 16 of July.

3.—A plentiful rain for five hours & an half with a great deal of thunder & lightening. It soaked things thoro'ly to the roots, & filled many ponds.

4.—Cut the first & the largest Cantaleupe, it weighed three pounds. The Succades keep coming. The swifts have disappeared for several days. Newton-pond was just got empty; & yet there was a pretty good share of water in the pond on the Common.

The Cantaleupe-bed by the trial-stick shews still a considerable Heat : it is owing no doubt to the tan.

Laurustines cast their old leaves.

Aug. 5.—Did a great stroke of Gardening after the rain : sowed a quarter with turnep seed, & planted it with savoys, the rows wide apart. Planted-out five more rows of Celeri ; in all six long rows : & planted a plot of endives. The endives seem to be planted too late to come to any size ; & the Celeri & savoys probably will not be large. The ground falls to pieces, & works as well as can be expected.

Gather'd the only & first Apricot the tree ever bore, it was a fair fruit, but not the sort sent for ; being an Orange & not a Breda. Scarce any of Murdoch Middleton's trees turn-out the sorts sent-for.[1]

7.—Dripping warm weather since the thunder-storm.

8.—The first Cantaleupe, growing on a faulty stem, was not curious. Very showery weather.

Cut the second Cantaleupe : it is crack'd at the eye. Great showers with distant thunder.

M^r. Yalden saw a single swift. Glow-worms appear'd again pretty frequent ; but more in the Hedges, & bushes than in June, when they were out on y^e turf.

9.—Melons keep coming. Saw two swallows feeding five Young ones that had just left their nest : they usually bring them out the beginning of July.

Aug. 9.—Planted a double row of Polyanths all along the great bank in the garden : they are all very small, being much stunted by the dry weather. Planted also some slips of the double Pheasant-ey'd pinks, which have very near blowed themselves to death.

Some hard rain, and distant thunder.

10.—A beautiful dry day. Many people are housing their wheat. The dripping week past has done a world of service.

Planted a large plot with savoys, & sowed it with turnep seed. The last-sown turneps come-up by hundreds.

[1] Once more a disappointment.—[R. B. S.]

House-Martin.

½ Life size.

Cut a large Cantaleupe that was crack'd neither at eye nor tail.

11.—Cut an other not crack'd.

12.—Vast showers: very little wheat carry'd.

The rains have restored a fine verdure, to the grass-walks that seemed to be burnt to death for many weeks.

14.—Great showers. The Cantaleupes come very fast, but do not crack well in general. Ten showery days restore a verdure.

Aug. 14.—Sent a brace & an half of Cantaleupes & a Succade-melon to Bro: Benj[n]. at London.

Some small Cantaleupes, that were not at all crack'd are delicate. A very rising Glass. Penny royal, baum, sage, mint, thyme, rue, marjoram, & lavender in high bloom.

Baker's-hill is harrowed-down after these great rains: it was no easy matter to subdue the clods at all. Some of the old elders round the garden are almost leafless. Wallnuts are this year innumerable. The white-apples are fit to make pies. Grapes, peaches, Nect: are very backward.

The Ground is now well-soaked.

The yellow-hammer continues to sing.

Wheat grows in the gripes.

Tremella abounds now on the walks; & the lichens encrease in size. The french-beans are still lousy in some degree.

14.—Sowed a Quarter of a pound of prickly-seeded spinage, & some Coss-lettuce to stand the winter.

The ground was in good order, & fell well to pieces.

A cold north wind.

Planted several slips of red pinks round y[e] borders, & some stocks, & bloody wall-flowers.

The burnet-seed, where it shatters on the Ground, comes-up very thick.

The catkins for next year are formed on the Hasels.

Aug. 16.—A cold N.E. wind, & rising glass.

Much wheat has been housed to-day. Some Cantaleupes, & Succades crack well at ye eye.

The stone-curlews clamour. The mornings, & evenings are chilly. Plums, and figgs are very back-ward. The large Aster with yellow thrums, supposed to be Virgil's Amello, begins to flower.

Trimm'd the vines of second wood for ye last time: the grapes are very backward.

The Yellow-hammer continues to sing.

The uncommon Aster with a black thrum blowing.

The variegated Epilobium in bloom.

17.—Very cold weather for the season, with a N. Wind. People house their wheat very briskly.

A very high barometer.

Melons continue in plenty.

The flea eats-up the Young turneps at a vast rate.

The weather so cold & dry, that nothing grows well in the Garden.

Aug. 19.—Cut all the Cantaleupes: they are not in general so well-grown, & so thick-flesh'd as in former Years, owing perhaps to the burning summer, which all the while was attended with N. drying winds not at all kindly to any kind of fruit, or Crops in the Garden.

The bed maintains still a sensible heat.

20.—Most beautiful harvest-weather for several days: the wheat will soon be all housed: that that was not carry'd-in too hastily will be in curious order.

The wren whistles. A nest of young water-wagtails is just come forth. Tack'd the wall-trees: their tops are shrivell'd, & their fruit advances but poorly.

21.—Took-in all the melon-frames in very dry order. The bed has still some sensible heat in it.

Very dry sultry weather with a falling glass. The night-moths, & earwigs, I find, feed on the flowers by night, as the bees & butterflies do by day: this I found by going-out with a candle.

22.—Upon digging into the melon-bed down to the tan after the frames were taken away, I found that the tan

maintained an heat equal to what is usual in a mild bed at first planting. From whence I concluded that the heat was too powerful this sunny scorching summer for the fruit by forcing them into ripeness before they are full-fleshed: in common summers, when there is a good deal of shady wet weather no doubt the use of tan is of excellent service for Cantaleupes, as I have experienced.

Put some little melons remaining, under hand-glasses. Hot sun-shine breaking-out of a thick fog which lasted 'til eleven o' the Clock. A vast uncommon dew.

Wild-ragwort, scabiouss, hawkweed, knap-weed, burdock, Yarrow, rest-harrow, &c: in flower.

Put a Quart$^{r.}$ of a pound of hops to the strong-beer brewed in March, which has work'd afresh this Summer.

24.—Wheat is housed in general; all the latter part of the Crop in most curious order.

Barley & oats are beginning to be cut.

Haws begin to turn red: elder-berries from red to black. Most sultry ripening weather for many days. Some few of my black grapes just begin to turn; & some of the sweet-water begin to grow a little clear. Wasps increase very fast.

Orleans-plums ripen.

Coveys of partridges are very large. Martins are grown very numerous at Selborne: they are much increased within these few Years. Vast crops of hops in some Gardens.

Aug. 25: 26.—Most severe Heat, with a falling Glass, & probably rain at a distance. People are beginning to pick Hops. Black Grapes begin to turn on the wall. Several martins have now second broods: quæ: if these late hatchings are not rather in favour of hiding than migration.

27.—Gathered my first figs. No rain now for 16 days. My only Nectarine, & two only peaches begin to tend towards ripeness. Mich: daiseys begin to blow.

Earth-nuts, & blue Devil's bit in bloom. Althæa frutex

in high bloom : Ladies bed-straw just out. Yellow-hammer seems to have done singing.

28.—Still, hot, gloomy days. Rain begins to be much wanted by the farmer, & Gardener.

30.—A moderate shower with a brisk Gale. The melons left under hand-glasses keep coming.

Full moon.

Yellow toad-flax, (linaria) great purple snap-dragon, (Antirrhinum) (found in a lane at Empshot, & supposed to be thrown-out from some Garden) Eye-bright, betony; small spear-worth, (Ranunculus flammeus) vervain-leaved-mallow, the common-reed, many sorts of Epilobium; Scabious, purple, & deep blue; wild basil, now in bloom. Wild Basil is a pretty flower, & a common weed.[1]

Swallows feed flying, & water-wagtails running round Horses in a meadow. The gentle motions of the Horse stir-up a succession of flies from the grass.

The water-wagtail seems to be the smallest english bird that walks with one leg at a time : the rest of that size & under all hop two legs together.[2]

The Alders have form'd their young catkins against next spring.

The Grapes change pretty fast.

Septem^{r}· 5.—Brisk winds, & showers for several days.

The apples are pretty much blown-down in some places; & the hops received some Injury.

The winds beat-down many of my figs, & baking pears. Since my melon-frames have been taken-in, & before the rains fell to moisten y^{e} mould on the bed, there grew up at once a very singular appearance of the fungus kind, that seemed rather to be poured over the ground than to vegetate : it was soft & pappy, & about the consistence of thick milk, & of a very ill savour. Where I wounded it with a stick it sent out a sort of bloody Ichor; & soon

[1] It will be noticed that about this time Gilbert White began to pay great attention to Botany.—[R. B. S.]

[2] This is an excellent observation, calling attention to the walking and hopping sections of English Passerine Birds.—[R. B. S.]

Pied Wagtail.

½ Life size.

hardened into a dark substance; & is now turn'd into a fine Impalpable dust like that of the Lupi Crepitus. I have had them on beds before the frames have been taken-off; when they have crept in part up the side of the frame. To the best of my remembrance they have never appeared on any beds that have not been covered with tan. On consulting Ray's methodus I find no traces of any such kind of fungus.

On the Lythe I found a few days since in full bloom the Dentaria aphyllos, seu Anblatum; a peculiar plant, of the same Class with the Orobanche. Hill says it begins flowering in May. This was ladies traces.

Sep. 7.—Fine ripening weather. Grass, & garden-plants grow apace. Howed and thinned my two plots of turneps. Earwigs eat the nect: by night, but not the peaches.

9.—Beautiful Autumnal weather: most of the Corn housed. Gathered my only Nect: it was not ripe; but the earwigs had gnawed it so that it could not come to anything. Gathered my first peach: it's flesh was thick, tender, white, & juicy; & parted from the stone. It was a good fruit; but not so high-flavoured as some I have met-with.

Gather'd some of my forward white grapes: they were very agreeable tho' not quite ripe: the black Grapes in general are backward.

On the steep chalky end of Whetham-hill I discovered a large plant of the deadly Nightshade [belladōna] full of ripe fruit: & on the bogs of Beans-pond in Wullmere forest the same day that peculiar plant the sun-dew [rorella] in plenty. There are it seems on the same bog plenty of cranberry-plants: but I could not venture on the moss to look after them. Cranberries, [vitis Idæa]. I thought I discovered a small Parnassia but was not sure. Found also southern wood [abrotanum] in a lane; & dyer's weed [luteola] very vigorous, & full of seed in a farm yard at Faringdon.

Owls hiss round the Church in a fierce threat'ning manner: I suppose they are old ones that have Young. There are young martins still in some nests. About five

days ago Sr. Sim : Stuart's game-keeper kill'd an wood-cock in the moors. Not true.

11.—Gathered my second & last peach: it was from a different tree from ye first, but seems to be the same sort.

13.—Bagg'd-up between 40, & 50 bunches of black Grapes in Crape. Ty'd-up all the best endives for blanching : they are but small.

Procured several Cranberry-plants from bean's pond with berries on them.

15.—Fine Autumn weather for many days.

Septr. 16.—Gathered some good white Grapes.

Took-in the Hand-glasses, & cut the two last melons; not ripe.

17 : 18.—Went down to Ringmer. The second day there was a moderate rain for eight Hours, during which I lay-by at Brighthelmstone.

In a lane towards the sea near a village call'd Whiting not far from ye above-named town I discovered a shrub of the rose kind, that had heps of a jet-black Colour, & very beautiful small pinnated leaves. As the leaves resembled those of Burnet, quæ : if this was not the Burnet-rose, which I think is said to grow wild. As it was quite out of bloom. I had not ye satisfaction of seeing the flower.

I saw a flower afterwards, & it was white & single.

On the poorer parts of ye Sussex-downs I saw the smaller Burnet in plenty; but it had shed it's seeds. I find the rich pasture-grounds at Ringmer very bare of Grass : they seem to have suffered by the drought this summer as much as in any parts of the Country.

Ladies-bedstraw frequently in flower on the downs; & a thistle with an echinated head, & little down to ye seeds.

Septr. 20.—Discovered plenty of the prickly rest-harrow (Anonis) & dier's broom, both in bloom & pod, in the pasture-fields at Ringmer.

Mrs. Snooke's grapes are very good; especially the

black. Her crop of apple's fail. Blue Scabiuss in plenty still. The rooks frequent ye nest-trees great part of ye day. I saw a few wheatears (birds) on the Sussex down as I came along. Vast quantities are caught by the shepherds in the season; (about ye beginning of Harvest) & yet no numbers are ever seen together, they not being gregarious. Showers, & some brisk winds.

Hawkweeds all ye Country over from the highest downs to ye lowest pasture-field.

Wasps seem at present to be very much check'd: they have gnaw'd the Grapes pretty much.

This very dry summer has damaged Mrs. Snooke's buildings by occasioning such vast chops in the clay-soil, that they loosen the walls, & make settlements. Since I came, there were cracks in the ground deeper than ye length of a walking stick.

24.—Made a visit to Mr. John Woods at his new mill. On the downs near Bpstone I found the downs covered with Burnet: & in one place, where the Ground had been devonshired the beginning of the summer, the ground was cloath'd-over with Burnet & filipendula, whose crowns had been severed with the turf. Found French-mercury (Mercurialis) the smallest sort of Cudweed; & saw abundance of sea-plants on ye shore which I had not time to examine.

Sepr. 26: 27: 28.—Returned from Ringmer. Fine dry soft weather; & the roads quite dusty. Very little rain has fallen yet: the deep pasture-Grounds round Ringmer are bare of Grass, & in great want of water. Many ponds on ye road are quite dry.

Saw plenty of the whorttle-berry plants on Rogate heath. I found my grapes in general very backward, notwithstanding the dry sunny weather.

The wasps seem to have done very little damage; they seem to be quite gone.

30.—Made 10 quarts of elder-juice; to which when I had put 10pds. of sugar, & boiled them up together, there came 13 bottles of syrop.

Ivy in full flower. Scabius, some mulleins, throat-worts, bugloss, hawkweeds, wild basil, marjoram, eye-bright, mallows, knapweeds, &c : still in bloom.

Found the Woodruffe (asperula) in plenty in my beechen Hanger. The beeches begin to be tinged with Yellow. A great rain.

*Sept*r 30.—The men are weeding the garden, which is very much over-run with groundsel.

*Oct*r 1.—A very cold, blustering day. Began fires. Began gathering the white apples, & golden pippins. Earthed-up the Celeri, some rows to ye top. Used ye first Endive : it is too small to blanch well.

Planted a row of Burnet-plants brought from ye Sussex-downs. The caterpillars have been pick'd off the savoys several times : those that have not used that precaution have lost every plant. The Cucumbers, & kidney-beans are cut-down with the Cold. The ashes, & maples in some places look yellow. The wood-lark sings, & the wood-pidgeon coos in ye Hanger. John took his bees.

3.—Vast showers with frequent claps of thunder.

Discovered the Enchanter's nightshade (Circæa) it grows in great plenty in the hollow lanes.

4.—Gather'd-in my baking-pears, about three bushels.

The wood ruffe, when a little dryed, has a most fragrant smell.

5.—Examined the wild black Hellebore (Helleboraster niger flore albo) an uncommon plant in general, but very common in Selborne-wood. Vast heavy showers with a tempestuous wind.

*Oct*r 6.—Vast showers : the Ground is well-drench'd.

8.—Planted a row of coss-lettuce along against ye fruit-wall to stand the winter.

Gather'd some very good grapes, both black & white, from the fruit-wall :[1] but there are an abundance on the House, that seem as if they never could be ripe.

[1] The fruit-wall faced due south, and the grapes thus got more sun than those on the house.—[H. M.]

10.—Discovered the small creeping tormentil (tormentilla) the gromwel (lithospermum) & the small Centaury (centaurium minus).

The wren sings. Martins are plenty flying about under the shelter of the Hanger.

8.—A great light seen, & a vast explosion from y^e^ S. about a quarter past nine in the evening: the Cause unknown. It shook peoples houses very much. It seems to be meteorous.

10.—Discovered common fumitory. Ray classes it under his anomalous plants.

11.—Discovered the Common-figwort (scrophularia) in bloom, & in pod; & the Common dog's mercury (cynocrambe).

12.—Discovered in M^rs.^ Etty's garden the silvery Alpine Crane's-bill (Geranium argenteum Alpinum), & the red Valerian (Valeriana floribus rubris caudatis). Snakes are still abroad, & wood ants creeping about.

A great rain again last night.

*Octob^r.^* 12.—The black Hellebores are budded for bloom on the Hill. The small creeping tormentil pretty frequent on Selborne-common.

15.—Set out for Oxon. Saw y^e^ first field-fare, martins still flying about. Saw none of the swallow-kind afterwards.

Farmer Knight sowed Baker's hill with wheat.

16.—Discovered on the banks of the Thames as I walked from Streatly to Wallingford—

The water hoar-hound (marrubium aquaticum) the yellow willow-herb, or loose-strife (lysimachia) the purple spiked D^o.^ (lysimachia purpurea) & the Comfrey (symphytum magūm) in bloom, being one of the Herbæ asperifoliæ: water figwort (scrop: aquat:).

I also saw in Oxford dry specimens of the less stitchwort (Caryophyllus holosteus arvensis glaber flore minore) & the Cross wort (cruciata).

I saw at the Physic garden Madder (rubia tinctorum) the Cymbalaria (linaria) hederaceo folio glabro: the stink-

ing Gladwin (Iris sylvestris) stinking hoar-hound (marrubium nigrum) white hoar-hound (marrubium album) a large sort of Burnet: moth mullein (blattaria) Bugle (bugula).

Water-scorpion-Grass (myosotis scorpioides palustris) the hawkweed called Hieracium echioides capitulis cardui benedicti; al: lang de beuf.

*Octob*r. 21.—Weather uncommonly mild: grass & garden-plants grow very fast.

26.—Returned from Oxon to Selborne. A very white frost in the morning. I have seen no Swallows since the 15th. Planted in my Garden nine large plants of small burnet, which I gathered in a Chalkey lane on my Journey.

John planted in my absence a plot of cabbages to stand ye winter. The garden-burnet still continues very vigorous; & the Celeri is grown very gross.

28.—A very smart frost that made the ground crisp, & has stripp'd the mulberry-tree & some ashes.

The Hanger looks very much faded, & the leaves begin to fall. In general the new-sown wheat comes-up well.

Plants still in bloom are the wild-basil, white behn, common mallow, several Hawkweeds, bugloss, the hoar-hounds, Hedge-nettles, dead-nettles, dandelion, wild succory, Ivy, furze, blue-bottles, thistle, sow-thistle, mullein, fumitory, Yarrow, wild Marjoram, (ariganum) tufted Basil, (clinopodium) small Centaury, honeysuckle, wild; Arbutus, Bramble, clover, charlock, throat-worts, crane's-bill, Scabious, Knapweed,—Mother of thyme, wild red Champion, butter-cups, stinking May weed, the common daisey, the great daisey, rag wort, broad-leaved Allheal, fluellins.

*Octob*r. 29.—Discovered in the lane leading to the Northfield base-hoar-hound with a white blossom, but just going out of bloom (stachys) common Selfheal out of bloom (prunella) Nettle-leaved throat-wort or Canterbury-bells (Trachelium) Cluster-flower'd, or little throat-wort (Campanula pratensis flore conglomerato) Dwarfspurge (tithymalus pumilus angustifolius) creeping mouse-ear (pilosella repens) Crow's foot Crane's bill (Geranium batrachoides).

30.—Discovered in my Ewel-close, a wheat-stubble, Sharp-pointed fluellin just coming into bloom (Linaria, Elatine dicta, folio acuminato) & round-leaved female fluellin (Linaria, Dº. dicta, folio subrotundo) in plenty: also Mouse-ear scorpion-grass (Myosotis scorpioides hirsuta): & broad-leaved little Allheal (Sideritis humilis lato obtuso folio.

The skie, & wood-lark sing in fine weather: rooks frequent their nest-trees. The ground is now full wet for a wheat-season. The wren sings.

31.—Discovered the Ivy-leaved Southistle, or wild lettuce (Lactuca sylvestris Murorum flore lutco) in a most shady part of the hollow lane under the cove of the rock as you first enter the lane in great plenty, on the right hand before you come to the nine-acre-lane: there was also male fern, (filix mas) & hart's tongue, (Phyllitis) discovered also common nipplewort (Lampsana) it is distinguished from Hawkweeds by having no down to it's seeds.

Novr. 2.—Gromel, figwort, viper's bugloss, & mouse-ear-scorpion-Grass still in bloom. I suspected I saw the leaves of the parnassia, on a bog.

Examined the viper's bugloss, (echium vulgare) & the small wild bugloss (buglossum sylvestre minus) the wild tanzy (tanacetum) great water horsetail, (equisetum palustre majus) Sun spurge (tithymalus helios-copius) wood-spurge (Tithymalus characias Amygdaloides) common Stt. John-wort (Hypericum vulgare) dwarf-hawkweed with sinuated very narrow leaves (Hierachium parvum inarenosis nascens, seminum pappis densicus radiatis) Knawel, Clown's all-heal (Sideritis fœtida) small procumbent Stt. John wort (Hypericum procumbens minus) Herb Gerard, Gout-weed, or ashweed (angelica sylvestris minor seu erratica).

Novr. 4.—Racked-off my half Hogsh: of raisin-wine, which began to ferment again: there was a great deal of sediment at bottom.

5.—A Considerable snow for many Hours: but it melted pretty much as it fell. Gathered-in a great quantity of Grapes, which are still very good.

6th.—A hard frost, & ice. Gathered-in all the grapes, about a bushel, the weather threatning for more frost. Spread the best bunches on a sheet in the dining-room.

12.—Replaced the rasp-plants that dyed in the summer.

The leaves of y^{e} Butcher's limes but just begin to fall.

The leaves in general hold-on well this year, thro' the mildness of the season.

17.—I planted the border by the wallnut-tree in y^{e} best Garden with two rows of my fine white, & blue Hyacinths: the blue are altogether at the end next the House. The border was well-dunged; & planted in good dry order. I planted also a good large spot with smaller roots, & offsets to make a nursery. The blue at the end next the House.

Dark still weather for many days, with some small rain sometimes, & a very high barometer. The water is much sunk away in the roads, & lakes.

Nov^{r}. 18.—Discovered the common polypody (polypodium vulgare) in the hollow lane; & the stinking flag-flower, called Gladdon or Gladwin, (Iris fœtida, Hyris dicta) in the hollow lane between Norton-yard, & French-meer just without the gate: it was thrown, in all probability, out of the garden which was formerly just on the other side of the Hedge. In general it is esteemed a bad blower; but this parcel of plants has produced many flowers this summer; & have several pods, which open in three parts, & turn-out y^{ir} scarlet berries much in the manner of the male piony. There is but one seed in each berry.

Discovered the common Spurrey (alsine, spergula dicta major) in pod, & bloom in a ploughed field: most exactly described by Ray.

22.—A very fierce frost for two nights: it froze within the second. Discovered little field-madder (rubeola arvensis repens cœrulea) & the small flowered pansy (viola bicolor arvensis) in a wheat-stubble in great abundance.

The potatoes turned-out well beyond expectation after such a burning summer: those planted on peat-dust were superior to those on old thatch.

The distinction between ye Scirpi, & the Junci.

Scirpus, a bull-rush : this kind of plant bears stamineous flowers, & naked seeds gathered into a squamose Head ; each scale holding a flatish triangular seed ; the stalk is without any knots, round, & has a spongy pith.

Juncus, a rush, differs from ye bull-rush in having an hexapetalous Calix, & as many stamina as ye Calix has leaves ; & many seeds contained in a seed-vessel.

Novr. 25.—Discovered the Joy-leaved speed well, or small Henbit (veronica flosculis singularibus, hederulæ folio, Morsus Gallinæ minor dicta) plenty in every garden & field.

Discovered on a bank at Faringdon Filex elegans, Adianto nigro accedens, segmentis rotundioribus ; a beautiful fern about six inches high : Pilewort, or ye less Celandine (Chelidonium minus) in it's first leaves ; it blows in March, & April : The greater Celandine in it's first leaves (Chelidonium majus vulgare) & chervil in it's first leaves (Cicutaria vulgaris ; sive Myrrhis sylvestris seminibus lœvibus) called also wild Cicely, & cow-weed.

Decr. 6.—Finish'd tacking, & trimming my fruit-wall trees : the peaches, & Nect : lie well to the wall, but seem not to be well-ripened in their wood this Year. The vines, (which were contracted to make room for ye Peach : & nectarines) have large well-ripened shoots.

12.—Found in a stubble in bloom, & pod the oval-leaved Turritis (Turritis foliis ovatis).

The flowers now in bloom are Yarrow, Turritis, spurrey, butter-cups, viola bicolor, dandelion, dead nettle, hedge Do.

Put a finishing hand to my new stable by making my saddle cup-board, shelves, &c.

Discovered in shrub : wood[1] Rough spleen-wort. (Conchitis aspera) it is known from poly pody by the tapering leaves reaching down to ye bottom of ye stem.

14.—An hard frost.

31.—A severe frost with an harsh E. wind, & cloudy

[1] Shrub Wood, a copse near by.—[H. M.]

skie: the Ground does not thaw in the middle of the day Dug-up melon-earth, & turn'd it up to the frost. Put some mellow earth in y^e^ border under the melon-skreen.

DUNG BORROWED IN 1765.

Feb. 4.—Of Kelsey Dung p^d.^ Car: p^d.^		5 loads.
D^o.^ Of Parsons Dung p^d.^ Car: p^d.^		3 loads.
March 8.—Of Parsons Dung p^d.^ Car p^d.^		5 loads.
D^o.^ Of Kelsey Dung p^d.^ car p^d.^		3 loads.
March 29.—Of Kelsey Dung p^d.^ car p^d.^		3 loads.
„ Of Parsons Dung p^d.^ Car: p^d.^		5 loads.
„ Of Berriman Dung p^d.^ C^r.^ p^d.^		4 loads.
April 4.—Of Kelsey Dung p^d.^ car p^d.^		1 load.
June 24.—Of Kelsey Dung p^d.^ car p^d.^ waggon		2 loads.

Garden-Kalendar for the Year 1766

Jan. 1st.—The last Year concluded, & this began with a very dry, still frost.

Wheeled into the melon-ground a parcel of my own dung that had never taken any wet; there having been no rain worth mentioning for many weeks.

4.—Made the seedling cucumber-bed.

10.—Sowed about 30 cucumr. seeds.

13.—The bed heats well, & the plants begin to appear. Severe, still frost yet. The ground has never thawed at all in the middle of the day, since this weather began; but is covered with dust. There have been several small flights of snow; but never enough quite to cover the ground: & yet several red-breasts, & some red-wings have been found frozen to death. It froze within very much to-night.

17.—The same still, dry weather continues, with a dark sky, & high barometer. The snow is quite gone; & the ground all dust. To-day the frost has lasted just three weeks. The cucumrs. come-up well: sowed more.

Jan. 18.—Somewhat of a thaw.

19.—A thaw still with an high barometer & a fog: the first Cucumrs. are potted, the second-sown are come-up well.

21.—A dry thaw with a N. wind, & high barometer. There has been no rain now for seven or eight weeks. The ponds are very low, & the wells sinking. The wind has been remarkably still since it has been so dry.

25.—A gentle thaw still, with vast fogs, but no rain. The ground that was so dusty, is now very dirty without any fall. The soil is strangely puffed-up, & lightened. Sowed a box of M^r. Gibsons polyanth-seed : & five rows of marrow-fat-pease in a very mellow, well-dunged quarter.

Some of the Cucum^r. plants keep dying for want of sun, being rotted by the reek of the bed.

28.—The same still, dark, dry weather with the glass higher than ever.

Jan. 29.—A vast white dew ; & fog in the day.

The barometer is higher than ever.

The Cucum^rs. hang their leaves, & want Sun.

30.—Sowed half the border under the melon-skreen with lettuce, & radishes. All the stiff soil is taken-out of that border, & laid-up to the frost to make melon-earth ; & mould that has been in the frames is laid in it's place. Very fierce frost, & partial fogs.

Feb. 1.—A thaw : rain & wind with a sinking glass.

The first rain for many weeks.

3.—Severe frost returns.

8.—Severe frost.

10 : 11.—Rain, soft weather, & a thoro' thaw.

13 : 14 : 15.—Continued Rains from the East, which occasioned vast floods in some places.

This fall was in several parts of the Kingdom a very great snow ; & in others a rain which froze as it fell, loading the trees with ice to such a degree, that many parks, & forests were miserably defaced, & mangled. A strong E. wind contributed much to this damage.

Feb. 18.—Made a fruiting-bed for Cucum^rs. with 8 loads of dung.

19.—Planted six rows of Winsor-beans.

25.—Planted the Cucum^r. bed with plants that have two joints, are stopp'd down, stocky, & well-coloured.

Mild, grey weather, with a tall barometer.

Land is in excellent mellow, dry order: people are sowing pease in the fields.

March 1.—Dry weather still with a sinking glass.

Brewed half an Hogsh: of strong-beer with 6 Bushels of Rich: Knight's malt, & two pounds & three quarters of good Hops. The water was from the well.

Sent a large flitch of bacon to be dryed to M^r. Etty's chimney: it lay seven weeks & three days in salt on account of the frost, during which it did not seem to take salt. The sun broke-out after many shady days.

2.—A white frost, & very wet afternoon.

3.—Sun-shine morning, the first for a long time.

Put some fresh Cucum^r. plants into some of y^e Hills: the first-removed were coddled in their own steam for want of Sun. Sowed the first Succades.

March 6.—The succades appear: the bed is full hot this mild weather.

7.—Potted the succades: sowed more.

Finished a low rod-hedge between y^e garden, & the orchard. Soft delicate weather.

Planted some wood-straw-berries along at y^e back of y^e new hedge.

8.—Transplanted some burnet, self-sown last summer: sowed carrots, coss lettuce, radishes in y^e border under the melon-skreen. Brought-in 10 loads of dung for the succade-bed; & one load to line the Cuc^r. seed-bed. Cucum^rs. begin to shew runners.

10.—Planted one Chaumontelle-espalier-pear at the S.W. side of the second middle quarter; & one Crasan-burgamot-pear opposite across the alley; & one D^o. near the standard nonpareil tree. These trees are from Armstrong at N. Warnboro; & are to supply the place of those that failed. Planted two more fan-elms at the back of the necessary-house.

Hot, sunny weather. The Cucum^r. bed is full warm.

March 12.—Sowed five rows of pease in the orchard the first crop begins to appear.

No rain for ten days. Sunny, hot days, with an E. wind, & frosty nights.

Made half an hogsh. of raisin-wine with one hund: of Malagas, & half an Hund: of Smyrnas. Put to the raisins ten buckets and an half of water. The raisins were new, & fine: the former cost 24s.: the latter 17s.

13.—Racked-off my last-made wine the third time. It is very good; but will not be quite fine, as it moves a little still. Took-away about two quarts of very thick Grout.

Planted some stinking gladwins in the garden, a sweet bryar, and a black hellebore from y^e^ wood.

Raked-down my asparagus-beds: the mould everywhere falls in a dust.

March 14.—Turned the melon-dung, which is very hot.

15.—Earth'd, & moss'd the seed-cucumber bed, which has the forwardest plants.

Hot sun-shine, & cold E. wind.

17.—Pegg'd-down the Cucum^rs.^ which were grown up to the Glasses.

The succades are very fine, & have two rough leaves.

Hot sunshine with frosts. There has been now no rains for fifteen days.

18.—Turn'd the melon-dung a second time. It is very hot. Black, windy weather, with some small flights of snow.

20.—Thick Ice. Made a Celeri-bed for an hand-glass.

Sheltered the wall-trees (which are too much blown) with boards, and doors.

22.—Sowed Celeri. Some rain after 19 very dry days. Sowed rows of parsley.

23.—Snow with thick ice, & a severe North-wind.

24.—More snow, & fierce frost.

Covered the fruit-trees against the wall with boards, & mats during these frosty nights.

Made the succade-bed with ten loads of dung that had been twice turn'd, & had heated much. It is a very stout bed, & seems in good order.

The fruit-trees against the wall are much blown-out, & in danger from this severe weather.

25.—Snow in the night, & Ice.

26.—Rain in the morning from the S. 'till twelve; then the wind turned N. & there came a violent snow for six hours, which lies very deep on the ground; & is but a bad sight so late in the Year. The wall-trees have been boarded, & matted all day; & the hot-beds have scarce been opened at all.

27.—A very heavy snow all day; which by night lay a vast thickness on the Ground; in many places three feet. All the shrubbs were weighed flat to y^e^ earth. The hot-bed was never uncovered all day; but the plants lived in darkness. The boards & mats were kept before y^e^ wall-trees.

28.—The snow melted in part with a strong sunshine: but it is still as deep as an horse's belly in many places.

The Cuc^r.^ plants look very well to-day.

March 29.—Warm air, & a swift thaw: yet y^e^ snow is very deep in some places: all along y^e^ N. field it is deeper than an Horse's belly.

Stopped-down the Succades: they are fine plants.

30.—Snow goes away with a gentle rain.

April 1: 2.—Great rain.

Female bloom of a Cucumber blows-out.[1]

3.—Black moist weather: the Hot-beds want sun.

4.—Put the hills on the succade-bed: the earth is rather too moist, not being housed before y^e^ snow. The dung has been brought-in ever since the eight of March: the bed seems now to be mild.

5.—Turned-out the Succades into the Hills: the plants are stout, & well-rooted; but look rather pale for want of sunshine.

Sowed some Romagnia melon-seeds from M^r.^ Humphry; & some Cantaleupe-seeds.

5.—Tunn'd the raisin-wine after I had let it settle a day & a night: I kept back a great quantity of grout. There

[1] *i.e.* expands.—[H. M.]

was a gallon or two over for filling-up. Coloured it with 15 bottles of elder syrop.

April 7.—Mowed the grass-plot for the first time.

9.—Planted five rows of large fine potatoes, with a layer of peat-dust in every trench.

Sowed a crop of Carrots, parsneps, coss-lettuce, & onions: a plot of leeks; double-stocks, dwarf-Sunflowers, & savoys.

Sowed twelve basons more of Selborne-saved lark-spurs.

The ground in curious, mellow order.

10.—The last-sown melons are coming-up.

Dry, March-like weather.

The succades push-out runners.

12.—Potted the Cantaleupes, & Romagnias.

Cucum$^{rs.}$ throw out fruit very fast.

Beautiful weather.

19.—Cut the first Cucumber.

Small showers.

22.—Cut y^{e} second cucumber.

Soft showers.

Cucumbers show a great succession of fruit.

April 26.—The succades have runners with three joints, are stopped, & shew third wood.

Cut three Cucumbers. Cucumbers grow very fast. Soft, showery, growing weather.

26.—Finished moving my barn, which I set at the upper end of the orchard. It began to move on Thursday the 17, & went with great ease by the assistance of about 8 men for that little way that it went in a straight line: but in general it moved in a curve, & was turned once quite round, & half way round again. When it came to the pitch of the Hill it required 20 hands; & particularly when it wanted to be shoved into it's place sideways, parallel with Collins's hedge.

Near one day of the time was taken-up in making new sills, one of which was broken in two by skrewing it round sideways. No accident happened to the workmen, or

labourers; & no part of the frame-work was broken or dislocated, so as to do any material damage.

The Workmen were three days in pulling down ye skillings, & blocking & removing obstructions, previous to ye removal. The barn is 40 feet long.

April 28.—Made some holes for the hand-glasses, fill'd them with the mowings of the walks, & sowed some large white Cucumbers.

Summer-like growing weather.

Cut 4 large Cucumbers.

Put the sticks to the pease. Weeded & thinn'd the lettuce.

29.—Sowed a pot of lucern-seed to transplant.

Earth'd the succade bed pretty near to ye full; & moss'd it all over.

Most beautiful, shady, growing weather.

May 5.—Made the second melon-bed with eight loads of hot dung, & some grass mowings. The dung is full hot still. There will be dung this year only for two frames.

The succade plants show fruit, & grow, & look well.

Black wet weather of late.

6.—Sowed seven rows, one pint, of dwarf-white-kidney-beans: the Ground has been dug three times this spring, & is very mellow.

8.—Made an annual-bed with grass mowings, & sowed it with African, & French Marigolds, pendulous amaranths, & China Asters.

8.—Sowed some snap-dragon seeds, and some dwarf-sun-flowers.

Planted five short rows of globe-artichokes, sent me by Mr. Fort of Salisbury.

Black, showery, growing weather for many days.

12.—Turned-out two pots of Romagnia-melons, & one of Cantaleupes into the new bed. Bored holes in ye bed, which is still full hot.

Succades shew male, & female bloom.

Thunder, & heavy cold showers.

The wheat, & barley turns somewhat yellow.

13.—Vast heavy showers, with Hail, & frosts at night.

14.—Covered the mould all over under the succades with whole wheaten straw : beat down the earth first.

Moss'd the hills of the new bed : the bed is very hot, & requires Care.

18.—Began mowing grass for y^e^ Horses.

Hot, summer-weather.

20.—Black, wet weather with a fierce N. wind, that tears-off the leaves from the trees.

May 27.—Thinn'd-out, & tack'd the peaches, & Nect : & laid some of the gross wood of last Year bare of their willow-like shoots, in order to make room for more moderate wood.

The Nect : that was blistered last year, is blistered again : & the first Nect : from the house is curled, & lousy, & wants good shoots. Yet in the whole there will be fruit on each tree which grows well : the apricot abounds with fruit.

The succades abound in strong healthy haulm, & begin to shew promising bloom. The last bed begins to be more moderate : the plants are just not burnt, and have not very weak runners, which are stopped-down.

28.—Succades begin to set.

Planted 50 cabbages.

Prick'd-out a plot of Celeri.

Black, cold, showery weather.

31.—Lined the succade-bed ; but did not put any mould on the lining.

June 2.—The succades keep blowing with good fruit. The frame is crowded with vigorous vines : but the plants want some sunny weather.

Earthed the second frame the second time.

The mould is somewhat burnt under the Hills : but the plants look pretty well, & send-out second wood.

June 3.—Prick'd-out more Celeri. Black wet weather.

4.—Very wet night, and morning.

Thinn'd-out the succade-vines, which quite choak the frame ; & begin to rot for want of air & sun.

Plenty of melons are sett, & setting.

Every thing is strangely wet; & grass & corn begin to lodge.

5.—Mended-out the rows of french beans, which are come-up very poorly.

7.—Succades as big as pidgeon's eggs.

Earth'd-out the second melon-bed, where there is pretty good Haulm.

Sowed a few Indian-turnep-seeds, given me by S^r^ Simeon Stuart.

Prick'd-out a large Quantity of Savoys.

Hot, summer weather.

10.—Fine weather.

Plenty of Succades, which are as large as a goose-egg.

13.—Sowed six rows, a second Crop of dwarf-white-french-beans. The first Crop is in a poor Condition.

Earth'd-out the lining of the Succade-melon-bed, & raised the frame. Thinn'd-out the haulm, which is full of fruit.

June 13.—Set several Cantaleupe, & Romagna melons. The succades are half grown.

The frame now raised stands too high.

Very windy weather.

16.—Sowed a crop of curled, & Batavia Endive, & a crop of Coss lettuce ; & planted-out a bed of Leeks.

21.—A week of most uncommon weather ; nothing but wet, & cold winds. Planted-out annuals.

23.—Summer-like weather. The Succade-bed has plenty of fruit well grown : the Cantaleupes & Romagnas have fruit set; but the Haulm, & stems of the fruit are too much drawn.

The shoots of the peaches, and Nect : are very curled, & lousy.

24 : 25.—Cut my Hay, a good Crop.

26.—A vast rain all night.

27.—Showers.

28.—Showers.

Lined the Romagna-bed with hot dung.

Some of the Romagnas are large fruit: the Cantaleupes are only just setting.

The hay in a poor Condition.

June 18.—Received a Hogsh. of port from Southtõn between Mr. Yalden, & myself.

29.—A very wet day.

July 1.—The hay toss'd about a little.

2.—Vast rains from the N.

5.—Ricked my hay on the 12th day from cutting: it was as well as could be expected, but has but little smell. The Crop was great.

6.—A storm of thunder, & lightening.

Cut a brace of melons. They come very quick from the time of setting; but are not curious this wet shady summer.

8.—Cut a brace of melons.

11.—More melons.

Vast showers.

15.—Melons come in heaps.

19.—Planted-out a plot of curled endive, & a plot of savoys: put sticks to the large french beans.

Finished cutting the hedges.

Sultry weather, & showers.

22.—Planted-out more curled endive, & some Batavian Endive; & planted-out some rows of German turneps.

July 26.—Planted more rows of German turneps.

Shady, showery weather still. All the succades come; but none good.

Aug. 4.—Bottled-off the hogsh: of port between Mr. Yalden, & myself.

5.—Hot, summer weather, with an high glass.

6.—Trimm'd, and tack'd the fruit-trees.

Romagna melons are come; but not good.

8.—Sowed three ounces of prickly-seeded spinage; & some Coss-lettuce: planted-out more savoys.

Severe heat, & fine ripening weather.

15.—Trenched three rows more of Celeri in Turner's Garden.

*Septem*r· 13.—Found the rows of Celeri backward, & not thriving.

The Crop of spinage fails.

Peaches & Nect: begin to ripen well: they are both large, & fair.

Grapes do but just begin to turn.

13.—Tyed-up endives both curled, & Batavian, they are curled well, & well-grown.

One crop of Savoys was well nigh destroyed by ye dry weather.

All the Nect: trees this Year produce fine fair fruit; but the first tree is distempered, & shrivelled.

The Apricot-tree produced a decent crop of fine fair fruit.

There are filberts, & nuts without end.

Potatoes are large, & good.

Peaches, & nectarines were fine in Septemr· being brought-on by the delicate autumnal weather.

*Octob*r· 4.—Black grapes are very good.

The first great rain with much distant thunder and lightening.

5.—Planted-out two long rows of polyanths from the seed-box: the seed came from Mr· Gibson's. Planted-out some stock-july-flowers.

The endives by the heat of the weather run much to seed.

25.—Planted 100 of Cabbages to stand the winter.

Planted Coss-lettuces to stand the winter against the fruit wall.

*Octob*r· 25.—Grapes, black-cluster, are very delicate. Autumnal rains come on.

*Nov*r· 10: & 11.—Trimmed the vines against the House.

Those at the end of the dining-room are weakly towards the top.

13.—Dug-up all the potatoes, a good crop, & large bulbs.

The Celeri arrives at no Growth, & is cropp'd by the Hogs.

Novr. 17 : 1766.—Planted a new Nectarine-tree against the fruit-wall, which the Nurseryman, Armstrong, calls a Violet.

Planted a standard golden pippin in the orchard.

DUNG BORROWED IN 1766.

Feb. 7.—Of Kelsey dung p$^{d.}$ car p$^{d.}$	.	4 loads.
Car : of my own 1 load car p$^{d.}$		
Feb. 7.—Of Parsons Dung p$^{d.}$ C$^{r.}$ p$^{d.}$	.	4 loads.
March 8.—Of Parsons Dung p$^{d.}$ C$^{r.}$ p$^{d.}$	.	5 loads.
Of Kelsey dung p$^{d.}$ car p$^{d.}$	.	4 loads.
Car : of my own 2 loads.		
April 17.—Of Parsons Dung p$^{d.}$ C$^{r.}$ p$^{d.}$	.	4 loads.
18.—Of Kelsey dung p$^{d.}$ car p$^{d.}$	.	1 load.
26.—Of I : Hale Dung p$^{d.}$ car : p$^{d.}$	.	3 loads.

Garden-Kalendar for the Year 1767

Jan. 1.—Hard frost begins to set in.

10.—Intense frost.

11.—Very deep snow.

14.—Very hard rain on the snow for many hours.

17, & 18.—Most severe frost, & the Country covered with ice.

19.—Made an hot-bed.

21. 22.—Regular thaw.

Feb. 6.—Cucum$^{r.}$ plants shew a rough leaf.

14.—A very wet season.

House-pidgeons begin to lay.

Cast dung in the farm yards.

25.—Made half an Hogsh: of raisin wine with one hund: of Malagas, & half an hund: of Smyrnas. The former cost 25s. p$^{r.}$ hund: & the latter the same. Put to the raisins ten buckets, & an half of water.

Vast rains still, with wind & lightening.

March 4.—Great rains.

March 5.—Sowed some Succade-seeds.

Stopped-down the Cucum$^{r.}$ plants that have got several joints.

A fine spring day.

10.—Sowed a crop of pease, the first. Sowed a small crop of Carrots, lettuce, & radishes.

Began planting the bank by the stable.

12.—Made the Cucumber-bed with 8 loads of dung. Some plants in the seed-bed show male-bloom. Beautiful sunny weather.

17.—Turned-out the Cucumber-plants into the Hills of the bearing-bed; they are fine plants, but full tall. The bed is hot & requires care. The plants for fruiting in the seedling-bed have good side shoots, & shew the rudiments of fruit.

Made a Celeri-bed with an Hand-glass.

18.—Sowed Cantaleupe-seeds.

23.—Tunned the raisin-wine which filled the half hogsh: there was about one gallon over. The wine, after drawn from y^e^ raisins, stood two days in a tub to settle, by which means a large quantity of grout was kept back.

Put to the wine ten bottles & one pint of elder syrop.

Mem: the syrop by being made with only one pound of sugar to a bottle of juice, fermented, & broke one bottle, & blowed-out some corks. Put one p^d.^ of sugar to the wine to make amends for the bottle of syrop which was lost. The wine is very sweet now.

March 25.—Brewed an half Hogsh: of strong-beer with six bushels of Rich: Knight's malt,[1] and three pounds of hops: well water.

28.—Cucumber-fruit blows out.

Planted some strong cuttings of my sweet-water grape against the fruit-wall, & against the wall of the House near the fig-tree, & brew-house door.

30.—Many Cucumber-fruit blown. Lined-out the seedling bed for the last time.

31.—Swallow appears.

April 2.—Put three Gallons of wine, half of which was of the strongest sort, into y^e^ vinegar-barrel.

3.—Rain, gentle & warm constantly for four whole days to this time. Grass grows wonderfully.

Earth'd-out y^e^ seedling-cucum^r.^ bed: fruit swells.

April 4.—Motacilla trochilus Lin: Regulus non cristatus Raii; & Parus ater Lin: & Raii, Angl: colemouse, sing.

6.—Saw more than twenty swallows & bank-martins at M^rs.^ Cole's at Liss over the Canals.

10.—The nightingale, motacilla luscinia, sings.

[1] This was James Knight's brother.—[R. B. S.]

The black-cap, motacilla atricapilla, sings.

The red-start, motacilla Phœnicurus appears.

Raised, & earth'd-out the large Cucumr. bed to the full; & mossed it.

11.—Cut a very large Cucumber.

12.—Cut five large ones, & sent them to London.

13.—Miller's thumb, Cottus gobio, spawns.

14.—Planted three rows of potatoes in a mellow quarter near the fruit-wall.

15.—Made the melon-bed, for two frames only, with 16 loads of hot dung, which had been cast, & turned over twice. The bed is stout, & consists of short, solid dung.

Put a good layer of cold dung at the top to keep down the steam.

Cold dry weather; & the fruit-trees are matted every night.

April 15.—Sowed carrots, parsneps, radishes, onions, leeks, lettuces, savoys, German turneps.

16.—Sowed Baker's hill (which is about an acre & an half of ground, walks, & melon-ground excluded) with seven bushels of Saintfoin along with a crop of barley of dame Knight's.[1]

The field was winter-fallowed, & has had two plowings besides: but by reason of the wet spring is sown in a very rough Condition.

It has been hand-pick'd of the weeds by women, & is got clean; & is to be rolled, & harrowed again.

Made an hand-glass bed for large white Dutch-Cucumbers.

Cold winds, & sleet.

The brambling, fringilla montifringilla, appears.[2] The cock is a fine gay bird.

17.—Some snow, with Ice & a fierce cutting wind.

[1] Fifty years ago the *old* women used to be called Dames.

[2] This is a curious note of Gilbert White's, as it reads as if he looked upon the appearance of the Brambling in the same light as that of the Redstart on the 10th. In reality, in such a beech-country as Selborne, the Brambling would be found throughout the winter, and on the 16th of April would be on the point of departing for its Scandinavian breeding-haunts. See note, p. 51.—[R. B. S.]

18.—Went to London.

June 12.—Returned to Selborne.

Cold black weather; & the fruit of all kinds cut-off in general.

June 16.—Lined the melon-bed with four loads of dung: the succades are full of haulm, & the fruit beginning to blow; the Cantaleupes look poor, and distempered.

18.—Succades begin to set.

Sowed a plot of endive.

9.—Planted-out annuals on a showery day.

29: 30.—Cut my hay, a good Crop.

July 2.—Ricked five jobbs in excellent order: one jobb in large cock catched in the rain.

3.—Pricked out savoys, & German turneps.

Some succades are large: Cantaleupes begin to blow.

Alauda minima locustæ voce, the titlark that sings like a Grass-hopper[1] seems to have finished his song.

The stoparola builds in the vine.

Spipola prima Aldrov: the white throat, sings.

The titlark sings.

Great showers about.

Planted-out Cucumbers for pickling.

July 5.—Rain & a tempestuous wind that damaged the garden much, & blowed down a green-gage plum-tree.

7.—Housed the last load of Hay.

8: 9.—Strong winds, & heavy showers unfavourable to the wheat.

11.—Vast showers still. Slip'd & planted out pinks, & wall-flowers.

The titlark still.

Young swallows appear.

The Stoparola brings out it's Young.

18.—Vines begin to blow.

20.—Ananas are in cutting at Hartley.

Trenched-out some Celeri.

Planted-out some endive.

Hot, summer-like weather.

[1] The Grasshopper Warbler.—[R. B. S.]

The titlark sings still.

The Nect: trees put-out some young shoots, & look better; the peach-trees shrivel-up, & get worse, & worse.

29: 30.—Vast rains, & wind.

Aug. 1.—The first crop of Succades were all cut: they are not good for want of sun, & dry weather.

Parus ater, the cole-mouse, sings.

10.—Hot, dry weather for some time.

Sep. 11.—Much wheat abroad, & some standing.

Second crop of Succades good. Cantaleupes good, but small.

Regulus non cristatus chirps.[1]

Peaches begin to ripen.

Peach, & Nect: trees a little recovered from y^ir^ distempered condition.

17.—Discovered the yellow centory, Centaurium luteum perfoliatum of Ray, in plenty up the sides of the steep cart-way in the King's field beyond Tull's. This is a very vague plant for ascertaining according to the sexual system.

Linn: makes it a gentian, & places it among the pentandrias: but it has commonly seven stamina. Hodson makes a new Genus of it (Blackstonia) unknown to Linn: placing it as an 8 andria digynia. It is best known by it's boat-like, very perfoliated leaves.

Moist black weather, which much retards harvest.

19.—Sultry weather, with a very high barometer.

Peaches are good, & Nectarines delicate, & large. Black grapes begin to turn colour.

Wheat in general is housed, & housing.

The black-cap, red-start, & white throat still appear.

Cantaleupes small with me, but good.

Succades good.

24.—Tyed-up many large endives.

Sweet Autumnal weather.

Ear-wigs, when small, fly about with ease: but, when full-grown do not attempt to rise; as if their wings were

[1] The Chiff-chaff (*Phylloscopus minor*) is the only one of the Willow Warblers which utters a lively note in autumn as well as in spring.—[R. B. S.]

not then adequate to their weight. This is a mistake; there are two species.

Melons over.

18.—Musca meridiana of Linn: & Scopoli appears.

*Octob*r. 5.—Great hail-storms, & cold weather.

Martins appear still.

Very few wasps.

Missle-thrushes come to the Yew-trees.

Endives are very fine.

8.—Celeri is blanched.

Gathered my apple, & pear-crop, which consisted literally of one Golden-pippin, & one Cadillac.

*Octob*r. 20.—Being on a visit at the house of my good friend Mr. John Mulso Rector of Witney, I rode-out on purpose to look after the base hore hound, the Stachys Fuchsii of Ray, which, that Gent: says, grows near Witney park: I found but one plant under the wall: but farther on near the turnpike that leads to Burford, in an hedge opposite to Minster Lovel, it grows most plentifully.

It was still blowing, & abounded with seed; a good parcel of which I brought away with me to sow in the dry banks round the village of Selborne. It is not known to grow in any Country save that of Oxõn, & Lincoln.

29.—Saw four or five swallows flying round & settling on the County-hospital at Oxõn.

*Nov*r. 4.—Bees & flies still continue to gather food from ye blossoms of Ivy.

5.—Gathered the first grapes; they are very sweet, & delicate; tho' the bū̄ches, & berries are smaller than usual. There is not one fifth part of the usual crop.

12. Continual wet, & high winds. People are much hindred in their wheat-season.

*Nov*r. 12.—Bro Benjn. saw a Marten flying in Fleet street.

16.—Vast rains.

18.—The first considerable frost.

23.—Put the Hyacinths in rows in part of a Quarter near the fruit wall. Many of the roots were decayed; &

the rest would have been better, had not the rains prevented their being put-out for several weeks.

Earthed-up all the Celeri. Some of it begins to pipe.

Grey still weather with an high Glass.

Dec^r. 1.—Dug-up the potatoes, a good Crop.

4.—A very hard frost with a little snow.

Car : away the melon-bed.

Sent two field-mice, a species very common in these parts (tho' unknown to the zoologists) to Thomas Pennant Esq. of Downing in Flintshire. They resemble much in colour y^e^ Mus domesticus medius of Ray ; but are smaller than the Mus domesticus vulg : seu minor of the same great Naturalist. They never enter houses ; are carryed into ricks, & barns with y^e^ sheaves ; abound in harvest ; & build their nests, composed of the blades of corn, up from the ground among the standing wheat ; & sometimes in thistles. They breed as many as eight Young at one time.[1]

Decem^r. 6.—Planted one golden-rennet, & six curious sorts of Goose-berries from Armstrong.

10.—The nut-hatch, sitta, sive picus cinereus, chirps. It runs about on trees, & hangs with it's back downward like the titmouse.

It builds in hollow trees, stopping-up great part of the hole with clay, so as to leave barely room to go in & out. There have been several nests in an hole in the yew-tree in Selborne church-yard. Some of the clay remains still at the top of the Crevice.

15.—Planted one Roman Nectarine, & one melting peach from Armstrong.

Decem^r. 16.—Mild, pleasant weather.

Daiseys, Herb Robert, ragwort, hepaticas, primroses, in bloom. Crocuss, & snow-drops spring.

22.—Strong frost after a long dry fit without any.

24.—Strong, bearing Ice, & a severe N.E. wind.

Covered the Celeri, & put straw to the roots of the new planted trees.

[1] See Letter XII to Pennant, of November 4, 1767 : *anteà*, p. 45.—[R. B. S.]

26, & 28.—Frequent flights of snow, & severe frost within doors.

30.—Severe frost, & still sunny fine days. It freezes even in the Kitchen.

31.—It froze under people's beds. Great rimes, & beautiful sunny days.[1]

DUNG BORROWED IN 1767.

March 6.—Of Parsons dung p$^{d.}$ C$^{r.}$ p$^{d.}$.	3 loads.
Of I: Hale little cart car: p$^{d.}$ dung p$^{d.}$	3 loads.
Of Kelsey car: p$^{d.}$ dung p$^{d.}$.	2 loads.
April 2.—Of Parsons dung p$^{d.}$ C$^{r.}$: p$^{d.}$.	4 loads.
2.—Of Kelsey car: p$^{d.}$ dung p$^{d.}$.	4 loads.
3.—Of Berriman car: p$^{d.}$ at three times	4 loads.
3.—Of I: Hale a little cart car: p$^{d.}$ dung p$^{d.}$	4 loads.
June 15.—Of I: Hale D$^{o.}$ car p$^{d.}$: dung p$^{d.}$	2 loads.
Of F: Parsons dung p$^{d.}$ C$^{r.}$: p$^{d.}$	2 loads.

[1] It will be noticed that for some time Gilbert White's "Garden Kalendar" has been getting less and less minutely kept. After his correspondence began with Pennant and Daines Barrington, he seems to have transferred his energies to the "Naturalists' Kalendar," and his notes in the "Garden Kalendar" are confined to the record of his wine-making and beer-brewing.—[R. B. S.]

Garden-Kalendar for the Year 1768

Feb. 16, 1768.—Made then 20 gallons of raisin-wine in a new barrel with one hund : of Malaga-raisins.

The raisins were good, & cost 25s. p^r. hund :[1] Put 6 buckets, & two thirds of water.

March 8.—Tunned the raisin-wine, & put to it 10 bottles of elder syrop. It just held out.

March 9.—Brewed half an Hogsh : of strong beer with six bushels of Rich^d. Knight's malt, & three pounds of Turner's hops.

Well-water. The beer work'd well.

May 19.—Rack'd-off the elder-wine, which worked too much : took from it two quarts of grout, & put to it one pint of brandy. It is sweet, & well flavoured.

Sep. 12.—Bottled-off the elder-wine made Feb. 16: it was fine, & well flavoured. The cask ran seven doz : of bottles : some bottles were very large.

Sep^r. 22.—Bottled-off the Hogsh : of port: it was very bright : my share ran 11 doz : & 10 Bottles.

Septem^r. 23.—Made 12 bottles of elder-syrop : put to it 10 pounds of coarse sugar.

Dung Borrowed in 1768.

March 5^th.—	Of Kelsey dung p^d. car : p^d. .	4 loads.
	Of Parsons car p^d. dung p^d. .	2 loads.
7.—	Of Hale dung paid car p^d. .	2 loads.
25.—	Of Hale dung paid car p^d. .	4 loads.
	Of Kelsey dung p^d. car p^d. .	8 loads.
	Of Parsons car p^d. dung p^d. .	4 loads.
Ap. 19.—	Of Parsons car p^d. dung p^d. .	2 loads.
June 10.—	Of Parsons car p^d. dung p^d. .	1 load.

[1] Raisins used to be about 23s. per cwt. fifty years ago, when all middle-class families made their own wine.—[H. M.]

Garden-Kalendar for the Year 1769

Feb. 8, 1769.—Brewed half an hogsh: of strong beer, with six bushels of Rich: Knight's malt, & three p$^{ds.}$ & an half of John Berriman's hops.

The water was about three parts rain-water.[1]

Feb. 27, 1769.—Mashed an hundred of Malaga raisins in order to make twenty gallons of wine.

The raisins were good & cost 23s. per hund.

Put 6 buckets & two thirds of a bucket of water.

March 21.—Tunned the raisin-wine, & added to it ten bottles of elder syrop.

Dung Borrowed in 1769.

March 6.—Of Hale dung p^{d} car p$^{d.}$	.	4 loads.
Of Benham car p$^{d.}$ dung p$^{d.}$	.	3 loads.
Apr. 13$^{th.}$—Of Hale dung p$^{d.}$ car pd.	.	4 loads.
Of Benham car p$^{d.}$ dung p$^{d.}$	.	4 loads.
May 12.—Of Benham car p$^{d.}$ dung p$^{d.}$	.	1 load.
June 12.—Of Benham car p$^{d.}$ dung p$^{d.}$	.	2 loads.

[1] Gilbert White, as will be seen, used rain-water for making his beer. The water from Well-head would be too hard for the purpose.—[H. M.]

Garden-Kalendar for the Year 1770

March 2, 1770.—Brewed half an hogsh : of strong beer with six bush : of Rich : Knight's malt, & 3 p$^{ds.}$ & an half of Berriman's hops.

Mem: put one bush : of brown malt to the second mashing.

March 12, 1770.—Mashed an hundred of Malaga-raisins in order to make twenty gallons of wine.

The raisins were good, & cost 23s. p$^{r.}$ hund.

Put 6 buckets & ¾ of water to the raisins.

April 6.—Tunned the wine and put to it eleven bottles of elder syrop. There was barely liquor enough to fill the barrel.

June 1, 1770.—Racked-off the raisin-wine made in March, & put to it one pint of brandy.

Took out a gallon of grout.

Dung Borrowed in 1770.

Feb. 22.—Of Hale car p$^{d.}$ dung p$^{d.}$	.	5 loads.
23.—Of Benham car: p$^{d.}$ dung p$^{d.}$	.	3 loads.
Dung p$^{d.}$ of Benham car: p$^{d.}$	. .	6 loads.
Of Hale car p$^{d.}$ dung p$^{d.}$	.	5 loads.
June 8.—Of Hale dung p$^{d.}$ car: p$^{d.}$	.	4 loads.
Aug. 2.— p$^{d.}$		

Master Hale brought me in one load of Hay.

Garden-Kalendar for the Year 1771

March 6, 1771.—Brewed half an hogshead of strong beer with 6 bushels of Rich : Knight's malt, & 3 p$^{ds.}$ & half of Berriman's hops. Kept it in the tun-tub, & laded in the yeast til the 8$^{th.}$

Severe frost at the time. All rain-water save one bucket.

Nov$^{r.}$ 29, 1771.—Brewed half an hogshead of strong beer with 6 bush : of Rich$^{d.}$ Knight's malt, & 3 p$^{ds.}$ & an half of Berriman's hops of the year 1770. The water was all from y^{e} well, but it was drawn some days before, & stood in the open air.

March 24, 1772.—Brewed half an hogshead of strong beer with 6 bush : of Rich : Knight's malt, & near 4 pounds of Berriman's hops of the year 1770. All rain water. Put one bush : of brown malt to the second mashing. The beer works well.

March 5, 1773.—Brewed half an hogshead of strong beer with 6 bushels of Rich : Knight's malt, & three pounds & an half of Berriman's hops. All rain water. Put one bush : of brown malt to the second mashing. Beer works well.

Nov$^{r.}$ 1, 1773.—Brewed half an hogshead of strong beer with six bushels of Rich : Knight's malt, & three pounds & an half of Berriman's new hops. All rain water. Put one bushel of brown malt to the second mashing.

DUNG BORROWED IN 1771.

March 8.—Of Hale Dung p^d. car p^d. .	5 loads.
11.—Of Benham Car p . .	3 loads.
April 1.—Of Hale one load dung p^d. car p^d.	1 load.

APPENDIX I

DURING the progress of this first volume through the press I have received some notes from my friends Mr. W. E. de Winton and Mr. R. I. Pocock, which are of considerable interest:—

Page 113. Water Shrew. White had evidently never found this Shrew. It is easily overlooked, and in his time it had only been recorded from the eastern and midland counties. It is, however, much more widely distributed throughout England than is generally supposed, and may sometimes be found a long way from water, though the sides of brooks and ponds are its favourite haunt. When lying on a plank across a small brook, I have often watched it diving and searching the bottom for shrimps and larvæ, when the air-bubbles on its fur made it look like a bar of silver.—[W. E. de W.]

Page 113. With regard to the Eagle Owl, there is always some doubt felt as to whether the individuals of this species, which are now and again met with in the British Islands, are not escaped birds. Some of the occurrences on the east coast and north of Scotland may be those of genuinely wild birds.—[W. E. de W.]

Page 113. Water Rat (*Microtus amphibius*). The potatoes were, no doubt, the attraction in this case, and similar instances are not rare, but this animal does not usually wander far from the sides of brooks or ponds, even in winter.—[W. E. de W.]

Page 114. The Large Great Bat (*Vesperugo noctula*). It is highly probable that Gilbert White has hit the mark as to the reason of the high flight and short summer activity of this species. Like the Swift, it feeds solely on small insects which are abroad only in the middle of summer. This Bat sleeps and hibernates almost invariably in hollow trees, and of course does not leave this country in winter. It may be seen before sundown flying over our London parks, especially over St. James's Park and Kensington Gardens.—[W. E. de W.]

Page 146. *Harvest Bug.* This notorious little pest is not an insect at all, but the young of several species of the mite, *Trombidium.* It is a minute red creature, scarcely discernible by the naked eye, and infests plants and animals of various kinds. In the case of human beings it burrows under the skin, causing a swelling, accompanied by much irritation. It usually collects in numbers behind the knee or on other parts of the body where clothing fits tightly.

Page 146. *Long shining fly.* This insect is nearly related to the fly *Piophila casei*, which is the parent of the well-known maggots, commonly called cheese-hoppers.—[R. I. P.]

Page 146. *Turnip-flies.* Also from their powers of hopping called turnip-*fleas.* As White says, however, this little insect is neither a fly nor a flea, but a beetle (*Phyllotreta nemorum*). Both in its larval and adult forms it does much damage to turnip crops by devouring the leaves of the plant.—[R. I. P.]

Page 147. *Oestrus curvicauda.* This insect, the horse bot-fly or horse gad-fly, the *Gastrophilis equi* of modern naturalists, much resembles a honey-bee in size and colour. It lays its eggs on the skin of horses, asses, and mules, instinctively selecting a spot well within reach of the quadruped's mouth. The maggot after emerging from the egg sets up irritation. The horse thereupon licks the infested spot, and swallows the maggot. But the maggot, instead of perishing, attaches itself to the walls of its host's stomach and there stays in perfect security for about a year, when, being nearly full grown, it makes its way to the outer air by way of the intestines, and completes its development on the ground. Linnæus confounded this species with the ox warble-fly (*Hypoderma bovis*), which lives in the larval stage beneath the skin of oxen, and gives rise to the disease referred to later on by White as the puckeridge. —[R. I. P.]

Page 147. The Star-tailed Maggot is, as White states, the larva of a large broad, somewhat bee-like fly, now called *Stratiomys chamæleon*, which may be seen on the wing in the neighbourhood of marshes, ponds, or ditches. The larva is a large, evil-looking aquatic grub, covered with a tough blackish skin, provided with a small pointed head in front and at the opposite end with a breathing orifice surrounded by a circlet of barbed hairs. Hence the epithet "Star-tailed," which White applies to it. By means of the barbed hairs the larva is enabled to suspend itself from the surface of the

water, hanging vertically downwards with the orifice just above the water's level, and also by the folding in of the hairs to carry a bubble of air to the bottom of the water for purpose of respiration. —[R. I. P.]

Page 154. *Scarabæus solstitialis.* This is the *Rhizotrogus solstitialis* of modern entomologists. This Cock-chafer or Summer-chafer is abundant in the South of England: it is considerably smaller than the Common Cock-chafer (*Melolontha vulgaris*), and may be further distinguished from it by having only *three*, instead of *seven*, plates on the feelers.—[R. I. P.]

APPENDIX II

Note on the Geology of the Selborne District

By C. W. Andrews, F.G.S.

The neighbourhood of Selborne offers a most excellent example of the close relation which exists between the geological structure and the scenery of a district. All the salient features of the landscape are at once explained by the nature and disposition of the underlying rocks, to the great variety of which, moreover, the richness of the flora and fauna is directly due. The village stands close to the foot of the bold chalk escarpment forming the extreme western boundary of the Weald, and the steep, beech-clad slopes of the Hanger and Nore Hill are formed by the denuded edges of beds of the Lower Chalk. The summit of Nore Hill is 696 feet above the sea, and that of the Hanger a little lower. Between the foot of the Hanger, which is about on the contour line of 400 feet, and the main street of the village is a narrow belt of the Chalk Marl, at the base of which lies a thin band (less than 10 feet) of Chloritic Marl. It is on the junction of these beds with the underlying Upper Greensand that the village stands. In Letter I, Gilbert White refers to the soil derived from the Chalk Marl as a "stiff clay (good wheat land)," while it is to the Chloritic Marl that the darker soil, described by him as "Black Malm," owes its origin.

The gently-sloping land to the east and north of the village is composed of beds of the Upper Greensand, which to the north-east terminate in a small escarpment or steep slope overlooking a valley in the softer Gault Clay. Along this escarpment, to which, like that of the Chalk, the name "Hanger" is locally given, landslips are not infrequent, and are sometimes of considerable extent, as in the case described by White in Letter XLV to Daines Barrington. These slips occur after heavy rains, and are caused by the beds of the

Upper Greensand, saturated with water, held up by the underlying Gault Clay, sliding forward over the slippery surface of that deposit. Even where extensive slips have not occurred, the ground near the edge of the Greensand area is often broken owing to slight displacements due to the same cause.

The upper part of the Upper Greensand (the "White Malm" of White), in this neighbourhood consists of alternations of blue ragstone, which is a hard argillaceous rock, and "firestone," which is a sandstone much used for hearthstones and oven-beds, as described in Letter IV to Pennant, where also the ragstone is mentioned as being used for a variety of purposes. These upper beds are well exposed in the side of some of the "hollow lanes" so characteristic of the neighbourhood. These are sometimes 15 to 20 feet deep, and seem to have been produced originally by the wear of traffic, but afterwards this has been assisted in deepening them by the water which runs along them after heavy rains.

The thickness of the Upper Greensand must be rather over 60 feet, for White mentions that the wells at Selborne are on the average about 63 feet deep, and the water is no doubt held up by the underlying Gault Clay. This latter deposit is exposed along a belt from half a mile to about a mile in width to the east of the Upper Greensand escarpment. It also appears along the lower part of the valley of the Oakhanger stream, which has cut down to it through the Upper Greensand beds as far as a point about a quarter of a mile east of Selborne Church. To the east of the Gault again we meet with the sandy beds of the Lower Greensand, which form the open furze and fir-clad heaths of Wolmer Forest and the neighbourhood. These sands seems to contain much water, which, in the lower ground, forms pools, of which Wolmer and Oakhanger Ponds are good examples.

White makes several references to the occurrence of fossils in the rocks of the neighbourhood. The shell which he figured and describes under the name *Mytilus crista-galli* is the *Alectryonia ricordeana*, Coquand (*Ostræa carinata*, Lamarck), from the Chalk Marl. The *Cornua Ammonis*, which he speaks of as being found in making the path up the Hanger, must consist of Ammonites from the Lower Chalk; while the Nautili from the north-west of the Hanger are probably the *Nautilus elegans* of the Chalk Marl. Other species from this last-named deposit are *Schlœnbachia*

(*Ammonites*) *varians*, *Turrilites costatus*, and *T. tuberculatus*. In the sandy Chloritic Marl are found Sponges, Pectens, and other Lamellibranchs, as well as Ammonites. From the Upper Greensand Sea-urchins, Pectens (*Pecten orbicularis*), *Actinocamax*, *Nautilus pseudo-elegans* and various Ammonites, including *Acanthoceras rhotomagense*, *Schlœnbachia varians* and *S. rostratus*, and *Hoplites catillus*.

From the above description it will be gathered that Selborne is from a naturalist's point of view singularly fortunately situated, since the alternation of hill and plain, with their varying soils resulting from the decomposition of the different underlying rocks, is favourable for the support of a great variety of plants, and, as a necessary consequence, of animals.

END OF VOL. I

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